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ANNUAL REPORT  
OF THE  
HEALTH DEPARTMENT

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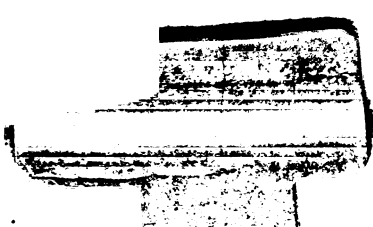
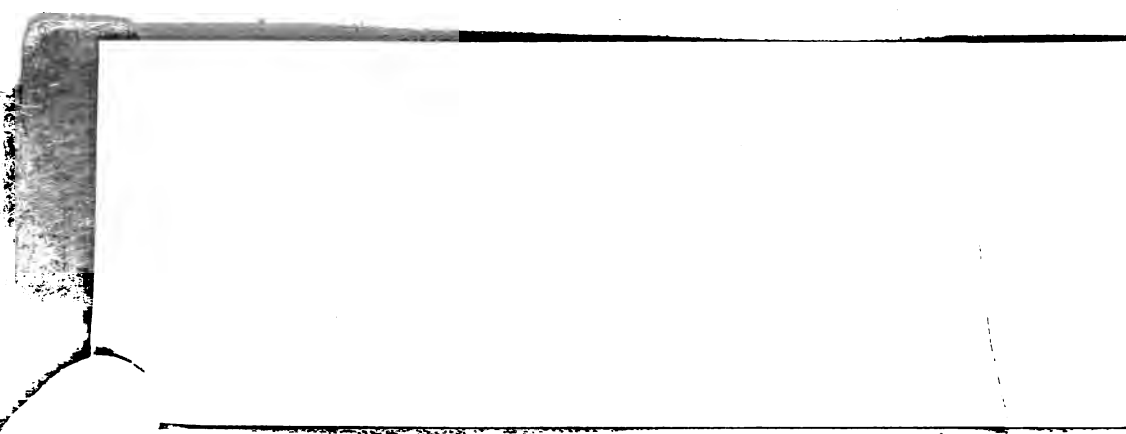
ERNEST C. LEVY, M. D., CHIEF HEALTH OFFICER.

Please Exchange.

Year Ending December 31, 1907

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RICHMOND, VA.:  
EVERETT WADDEY CO.  
1908



ANNUAL REPORT  
OF THE  
HEALTH DEPARTMENT

OF THE  
CITY OF RICHMOND, VA.

FOR THE  
Year Ending December 31, 1907

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RICHMOND, VA.:  
EVERETT WADDEY CO.  
1908



# HEALTH DEPARTMENT, CITY OF RICHMOND

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## BOARD OF HEALTH.

W. T. OPPENHIMER, M. D., PRESIDENT.

R. D. GARCIN, M. D.,

M. D. HOGE, JR., M. D.,

JAMES R. GORDON,

JAMES E. PHILLIPS, JR.

CLERK, J. C. BOSHER.

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## CHIEF HEALTH OFFICER.

ERNEST C. LEVY, M. D.

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## MEDICAL INSPECTOR.

ALLEN W. FREEMAN, M. D.

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## CITY BACTERIOLOGIST.

KARL S. BLACKWELL, M. D.

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## PHYSICIANS FOR THE POOR.

T. G. PRETLOW, M. D., 1st Dist.

J. F. CRANE, M. D., 2d Dist.

T. E. STRATTON, M. D., 3d Dist.

L. D. BATKINS, M. D., 4th Dist.

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## REGISTRAR OF VITAL STATISTICS.

J. M. DONAHOE.

---

## INSPECTOR OF PLUMBING.

THOMAS M. LANDERS.

---

## MILK AND FOOD SUPPLIES.

W. T. HOLDSWORTH, INSPECTOR.

J. M. WHITFIELD, M. D., ASSISTANT AND CHEMIST.

E. M. NOBLE, ASSISTANT.

R. H. CURTIS, DAIRY INSPECTOR.

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## FUMIGATOR.

JAMES F. WALLER.

---

## SANITARY INSPECTORS.

W. A. CRUMP, 1st Dist.,

J. T. GILL, 2d Dist.

E. A. BOAZ, 3d Dist.,

W. H. MOSLEY, 4th Dist.

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## STENOGRAPHER.

MISS. E. M. COX.

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RICHMOND, VA., *February 10, 1908.*

Honorable CARLTON MCCARTHY,  
*Mayor of the City of Richmond.*

Sir: The Board of Health herewith respectfully submits, as their report for 1907, the accompanying reports of the Chief Health Officer and his subordinate officers.

Very respectfully,

W. T. OPPENHIMER, M. D., *President.*

RAMON D. GARCIN, M. D.

JAMES R. GORDON.

M. D. HOGE, JR., M. D.

JAMES E. PHILLIPS, JR.





# ANNUAL REPORT.

## REPORT OF THE CHIEF HEALTH OFFICER.

RICHMOND, VA., February 7, 1908.

*To the Honorable Board of Health of the City of Richmond.*

GENTLEMEN: I have the honor herewith to submit to you the thirty-sixth annual report of the Health Department of the City of Richmond, being my second annual report as Chief Health Officer under the ordinance of June 18, 1906. I also transmit to you the reports of the other officers of the Department.

The year 1907 was a notable one in the history of the Health Department. After reorganization under the ordinance above mentioned, there was little opportunity during the remainder of 1906 to inaugurate new policies, both because of the lack of funds and because of the great amount of work to be done in putting the office on a sound and systematic basis in many particulars.

With the obtaining of additional appropriations in the annual budget for 1907 and the passage of a special ordinance a little later (May 20th) creating certain new positions which had been asked for, advanced work was started as speedily as possible in a number of directions, and this work has been systematically followed up ever since, with the result that the Health Department of Richmond is now on a much higher plane of efficiency than at any time in the past.

The chief advances which have been made are the following:

- (1) The establishment of the positions of Medical Inspector and Registrar of Vital Statistics.
- (2) The inauguration of systematic dairy inspection and other measures for the sanitary improvement of the milk supply.
- (3) The beginning of the campaign against tuberculosis.
- (4) General improvement in the methods of the office.

### CLERK.

Mr. James E. O'Grady, who for many years had been clerk to the Board of Health, was forced to resign on February 19th, on account of continued ill health. The Board of Health elected as his successor Mr. J. C. Boshier, who entered office on February 22d. Mr. Boshier rapidly learned the duties of his position and has displayed great energy and ability in meeting new conditions as they arise. I regard him as a most valued addition to the force of the Department.

### MEDICAL INSPECTOR.

The ordinance creating the three new positions of Medical Inspector, Registrar of Vital Statistics and stenographer was approved on May 20th, and these positions were filled by the Board of Health at their last meeting in that month. All the officers so appointed qualified on June 3d.

The Department was especially fortunate in the election of Dr. Allen W. Freeman as Medical Inspector. Dr. Freeman had enjoyed exceptional advantages in his medical preparation before coming to us, and since becoming connected with the Health Department he has shown unusual aptitude and ability in public health work. To no one thing is the success of the Department during the past year more attributable than to Dr. Freeman's excellent work.

The establishment of this position enables the Department to follow up a number of lines of work in connection with infectious diseases which there had previously been no

means of attending to. Since last June, every case of typhoid fever, scarlet fever and diphtheria, and most cases of chicken pox, have been investigated by the Medical Inspector as soon as reported to this office. This has been doubly to the advantage of the Department; for not only has this work resulted in the lessening of the spread of these maladies—in a number of instances which can positively be demonstrated and in a far greater number by implication—but it has also contributed to the more prompt securing of reports of contagious diseases from the doctors of the city, as they have been made to understand that their reports are immediately followed up and made the basis of life-saving work.

All reportable contagious diseases are systematically investigated and their course studied, thus enabling the Department to keep in close touch with the exact state of affairs in relation to these diseases. As each case is personally investigated, thorough directions are given to the persons in charge as to the proper measures to be taken to prevent the spread of the infection. It is confidently believed that this has done much to limit the spread of these diseases. In practically every instance in which secondary cases of infectious diseases have occurred in a house it has been found that the directions of the Department have been ignored; hence it is evident that the following of these directions has been effective in most instances.

Sanitarians are coming more and more to understand that the observance of proper precautions during illness is of greater importance than mere terminal disinfection after recovery. Hence the great advantage of seeing that proper directions are given in each household during the illness.

Besides the work above outlined, the Medical Inspector has had the duty of taking the final release cultures in all cases of diphtheria, while in many instances, on the request of the attending physician, he has taken all release cultures, and many for diagnosis as well, besides administering antitoxin in a number of cases. The work done by the Medical Inspector is well shown in his report.

#### REGISTRAR OF VITAL STATISTICS.

All sanitary authorities, without exception, recognize the fact that efficient public health work must be founded on an intelligent study of vital statistics. To a considerable extent such studies, wherever conducted, bring out certain facts and principles of broad, and even universal, application, such as the victory over smallpox in countries where compulsory vaccination is enforced, the lessening of typhoid fever following the change from a polluted to a pure water supply, and the lowering of infant mortality by sanitary improvement of the milk supply. But in many other directions it is impracticable, and often misleading and dangerous, to apply too closely to any given community the results of statistical studies undertaken elsewhere. Especially, as we have already been able to show within the past year, must deductions made from studies in the North be applied with caution to our own locality.

Besides their importance from a sanitary point of view, of course accurate vital statistics have great value in other directions. We therefore asked last year to have the position of Registrar of Vital Statistics established, and the ordinance creating this position was passed on May 20th. Mr. J. M. Donohoe was appointed to the office later in the same month, and qualified on June 3d.

The Registrar has been very active in securing more complete returns of births, and much of the improvement in this respect (see elsewhere in this report) is due to his efforts.

Up to the present time the Registrar has compiled tables and diagrams showing the death-rate in Richmond for the last twenty-eight years from the following causes: pulmonary tuberculosis, all forms of tuberculosis, typhoid fever and malarial fever. Since the published annual reports of the Health Department had been on a different basis from year to year, some years including non-residents and again excluding them (to mention

only one discrepancy), and since the methods of classification have varied widely within the period mentioned, it was realized that in order to obtain reliable statistical information on these important matters, the original certificates of death would have to be consulted.

This has made the work very time-consuming, but we now have available some trustworthy data for very valuable statistical studies. The tables and diagrams now in hand show on their face some exceedingly interesting facts, but they have not yet been studied with sufficient care to warrant their publication at this time. These studies, when completed, and when extended to cover other diseases, will furnish the Department with information not only of great value for its own guidance, but also of national significance, especially such data as relate to the negro race from a public health standpoint, concerning which so little is at present known on account of lack of just such studies.

#### CITY BACTERIOLOGIST.

Dr. E. Guy Hopkins, who had been City Bacteriologist since the reorganization of the Health Department in 1906, resigned on August 15, 1907. Dr. Hopkin's recognized ability as a bacteriologist made his resignation a distinct loss to the Department. The place was not filled permanently until the election of Dr. Karl S. Blackwell, on October 14, Dr. A. W. Freeman (our Medical Inspector) and Dr. E. B. Spencer having served as acting City Bacteriologist during these two months.

Dr. Blackwell's report, which is herewith transmitted, shows the extensive use which the doctors of Richmond have made of the laboratory, the total number of examinations (2,380) being nearly double those of 1906. This is sufficient testimony, not only to the assistance which the doctors of the city get from this work, but also of the confidence which they feel in the men who have held the position.

#### OTHER CHANGES IN THE FORCE.

On October 15th, Mr. A. D. Wren, Sanitary Officer for the Fourth District, resigned. Mr. Wren had been with us over a year and was one of our most valued officers. The vacancy caused by his resignation was filled by the election of Mr. J. T. Gill, who was assigned to the second district, Mr. Mosby being transferred to the fourth. All the sanitary officers have discharged their duties with the utmost satisfaction.

Mr. E. M. Noble was elected assistant to the Inspector of Milk and Food Supplies when Mr. R. H. Curtis was assigned to dairy inspection work on May 1st. In no division of the Health Department have the men shown greater ability and devotion to the interests of the Department than those connected with our pure food work.

#### SANITARY IMPROVEMENT OF THE MILK SUPPLY.

Among the most important advances made during 1907 was the beginning of our work for sanitary improvement of the milk supply. For this purpose the sum of two thousand dollars (\$2,000.00) was asked for and included in the annual budget. This became available towards the end of March. Plans for carrying on the work were promptly presented to the Board of Health. In accordance with these plans, a Dairy Inspector was appointed by the Board, their choice being Mr. R. H. Curtis, who had for nearly a year been assistant to the Inspector of Milk and Food Supplies; and the work of Dr. J. M. Whitfield, Chemist to the Department, was extended to include bacteriological and microscopical examinations of milk. The work was begun on May 1st.

For the first few days I accompanied the Dairy Inspector on his rounds among the dairy farms. Although, as mentioned in the annual report for 1906, it had been realized that there were some very dirty places sending milk into Richmond (as must be the case everywhere when there is no supervision), I had no conception of the extremely bad conditions which were actually found at many places. At the end of these first days,

it was evident that the work of putting the milk supply of Richmond on a proper sanitary basis was immensely greater than had been anticipated.

At the very first place visited the following state of affairs was found. The cow barns consisted of two small, dilapidated sheds, so low that one had to stoop until one reached the centre of the shed; so offensive to the nostrils that in measuring the cubic contents, it was necessary to take one dimension and then escape to the open air before taking the others. Manure stood everywhere over a foot deep. The cows were huddled so close that their sides and rear ends almost touched. The milk, after coming from the cows, was poured, without any attempt at cooling, into cans which stood just outside the stable, in a dirty yard, and, finally (skipping a number of minor horrors), the water used on the place was gotten from a well in which the water stood about four feet from the surface, while a short distance uphill was an overflowing privy. This man was selling regularly in the city of Richmond milk from seventeen cows. His place was the worst which we found at all, and "scored" (see explanation farther on) only 20. He was ordered to erect a proper cow stable and milk house, abandon the well and pipe into his milk house a small spring which happened to be near at hand, and install a cooler for the prompt and efficient cooling of his milk. At each subsequent visit great improvements were found, and at the end of the year he had one of the very best places shipping milk into Richmond and scoring 84.5 per cent.

#### PUBLIC MEETING FOR DAIRYMEN.

Not only did we find such places as this, but it became at once apparent that the fact of the Department's starting in a campaign for pure milk was causing great excitement and unrest among the milk people, who, in the absence of authentic information as to just what would be required of them, feared all manner of dire consequences. To meet these difficulties, it was decided to invite all the milk people to a conference, for the purpose of explaining to them exactly the lines along which we would work, and, at the same time, of giving them the opportunity of asking questions and making suggestions of their own. Accordingly, notices were sent to all producers supplying milk to the Richmond market, inviting them to attend this meeting, which was held on May 9th, just nine days after starting the work, in the auditorium of Mechanics Institute, which was kindly placed at our disposal by the management.

Meanwhile, being in Washington in attendance on the meeting of the National Association for the Study and Prevention of Tuberculosis, I was fortunate enough to get Mr. E. H. Webster, chief of the Dairy Division of the U. S. Department of Agriculture, to agree to send one of his assistants, Dr. Ellis M. Santee, to attend this meeting and take part in it.

The meeting was a great success. Practically every dairyman sending milk into Richmond was present, some coming a considerable distance. The meeting was presided over by Dr. W. T. Oppenheimer, President of the Board of Health. The importance of clean milk was fully discussed by the Chief Health Officer, who explained how infected milk, and, especially, "dirty" milk, was responsible for the death of thousands of infants every summer. Next, Dr. Santee gave an admirable talk, profusely illustrated by lantern slides, showing in detail how a dairy farm should be conducted. After these talks the dairymen were told that they were expected to ask questions, and they responded with much enthusiasm. Altogether, the meeting was productive, not only of a better understanding as to our requirements, but also of much better feeling.

#### DAIRY SCORE CARD.

From the very first, the score card recommended by the U. S. Department of Agriculture was used in connection with dairy inspection, the only essential modification being a margin reserved for binding. This score card (both sides) is shown below.

# HEALTH DEPARTMENT OF THE CITY OF RICHMOND.

## MILK AND FOOD SUPPLIES.

### SANITARY INSPECTION OF DAIRIES.

#### Dairy Score Card.

Owner or lessee of farm: .....  
 Location: .....  
 Total No. of cows: ..... No. milking: ..... Quarts of milk produced daily: .....  
 Product is sold at wholesale—retail. Name and address of dealer to whom shipped: .....  
 Permit No. .... Date of inspection: ..... 190.....

	SCORE.		REMARKS.
	PERFECT	ALLOW'D	
COWS.			
Condition.....	2		
Health: Outward appearance.....	3		
Comfort.....	2		
Ventilation.....	4		
Cubic Space.....	3		
Cleanliness.....	5		
Food.....	2		
Water.....	4		
Total.....	25		Per cent perfect.....
STABLES.			
Location.....	3		
Construction.....	5		
Cleanliness.....	7		
Light.....	5		
Stable air.....	2		
Removal of manure.....	2		
Stable yard.....	1		
Total.....	25		Per cent perfect.....
MILK HOUSE AND STORAGE.			
Location.....	2		
Construction.....	2		
Equipment.....	3		
Cleanliness.....	3		
Care and cleanliness of utensils.....	5		
Water supply for cleaning.....	5		
Storing at low temperature.....	5		
Total.....	25		Per cent perfect.....
MILKING AND HANDLING MILK			
Cleanliness of milking.....	10		
Prompt and efficient cooling.....	10		
Protection during transp'n.....	5		
Total.....	25		Per cent perfect.....
Total.....	100		

QUESTION 1. Has the herd passed the tuberculin test within a year? Yes. No.

QUESTION 2. Has the water supply been examined for contamination? Yes. No.

QUESTION 3. Is there any case of contagious disease on the farm that is not properly isolated?  
 Yes. No.

Signed: ..... Inspector.

NOTE.—If conditions are so exceptionally bad in any particular as to be inadequately expressed by a score of 0 the inspector will write BAD in the column of Remarks, opposite the 0.

## DIRECTIONS FOR SCORING.

### COWS.

**CONDITION.**—Allow 2 if in good flesh. Deduct according to conditions.  
**HEALTH.**—Allow 3 if apparently healthy. Deduct for indications of disease.  
**COMFORT.**—Allow 2 for good conditions. Deduct 1 for poor (a)\* or no bedding (b) and 1 if left too long in cold outside (c) or inside (d) of stable.  
**VENTILATION.**—Allow 4 for good system—King or muslin curtain (a)—2 for windows inclining inward at top (b), 1 for sliding windows (c), and nothing for holes in ceiling (d).  
**CUBIC SPACE PER COW.**—Allow 3 if 500 to 1,000 cubic feet per cow, 2 for less than 500 and over 400, 1 for less than 400 and over 300. For less than 300, 0. Deduct 1 for each 500 cubic feet over 1,000 under winter conditions.  
**CLEANLINESS.**—Allow 5 if perfect. Deduct according to conditions.  
**FOOD.**—Allow 2 if good. Deduct for anything musty or decomposed.  
**WATER.**—Allow 4 for clean running water in trough NEAR stable (a) and 3 for same INSIDE stable (b); deduct for running water DISTANT from stable according to distance (c); deduct 1 for still water or water pumped by hand (d). (Water from windmill tanks under good conditions will be considered as running water.)

### STABLES.

**LOCATION.**—Allow 3 if used for no other purpose (a), conveniently located (b), on well-drained ground (c) with yard protected from cold winds (d). Deduct 3 if horses, swine, or poultry are kept in stable. Deduct 1 if poultry are allowed in stable during day.  
**CONSTRUCTION.**—Allow 2 for floor of good cement (a) or equally good material (b) in good condition (c); good wood floor 1 (d); properly constructed gutter  $\frac{1}{2}$  (e); good stall (f); swinging stanchion (g) or good tie  $\frac{1}{2}$  (h); smooth tight ceiling  $\frac{1}{2}$  (i); side walls smooth and tight  $\frac{1}{2}$  (j), convenient box stall  $\frac{1}{2}$  (k), good low down manger  $\frac{1}{2}$  (l).  
**CLEANLINESS.**—Allow 4 for a washed floor (a); 2 if well swept (b); and 1 if well scraped (c). Allow 1 for clean side walls (d); 1 for clean windows (e); and 1 for clean ceilings and ledges (f).  
**LIGHT.**—Allow 5 for four square feet of unobstructed glass per stanchion or stall (a) and evenly distributed (b). Deduct  $\frac{1}{2}$  point for each square foot less than four; deduct 2 for uneven distribution of light, not exceeding 2 points.  
**STABLE AIR.**—Allow 2 if free from dust and odors at time of milking. Deduct according to conditions.  
**REMOVAL OF MANURE.**—Allow 2 if removed daily to field or to proper pit giving off no odor to stable. Deduct 1 if removed to yard and over 30 feet from stable; otherwise allow 0.  
**STABLE YARD.**—Allow  $\frac{1}{2}$  point if clean (a), and  $\frac{1}{2}$  point if well drained (b).

### MILK HOUSE AND STORAGE.

**LOCATION.**—Allow 2 if conveniently located (a), away from hog pen (b), privy (c), or other source of contamination (d). Deduct 1 for no clear air space between stable and milk room.  
**CONSTRUCTION.**—Allow 2 for tight, sound floor (a), walls and ceiling (b), well lighted (c), well ventilated (d), and free from flies (e).  
**EQUIPMENT.**—Allow 1 point for hot water or steam for cleansing utensils (a);  $\frac{1}{2}$  point for cooler in good condition (b); 1 for proper narrow-top milk pail (c);  $\frac{1}{2}$  point for general utensils properly constructed (d).  
**CLEANLINESS.**—Allow 3 if interior is clean. Deduct according to conditions.  
**UTENSILS.**—Allow 3 if clean (a); 2 for proper care (b) (inverted in pure air). Otherwise, 0.  
**WATER SUPPLY FOR CLEANING.**—Allow 5 if abundant, convenient, and pure. Deduct according to conditions.  
**STORAGE.**—Allow 5 if stored at 50° F. or below; over 50° and not over 55° F., 4; over 55° and not over 60° F., 3; over 60° F., 0.

### MILKING AND HANDLING MILK.

**CLEANLINESS OF MILKING.**—Allow 3 for clean suits used only for milking (a) and kept in a clean place when not in use (b). Allow 4 for washing udders and teats and wiping them with a clean towel (c); 2 if wiped with moist cloth only (d); 1 if wiped with clean dry cloth (e). 0 if cleaning is done after milker sits down to milk or if no attention is given. Allow 3 if milking is done with clean dry hands.  
**PROMPT AND EFFICIENT COOLING.**—Allow 5 if cooled immediately after each cow is milked. Allow 5 if cooled to 50° F. or below; over 50° and not over 55° F., 4; over 55° and not over 60° F., 3; over 60° F., 0.  
**PROTECTION DURING TRANSPORTATION.**—Allow 5 if iced and covered; 4 if cans are jacketed or covered with clean, wet blanket; 2 for dry blanket. If no protection, 0.

\*The letters a, b, c, etc., should be entered on score card to show condition of dairy, and when so entered should always indicate a deficiency.

By the employment of this score card, every point of importance in the production of pure, "clean" milk is given a numerical rating, in accordance with its relative value. In this way a far more accurate conception can be gained of the standing of each place, both actually and relatively, than is possible with a system in which the ratings are merely descriptive. It is impossible to get an exact idea of a dairy farm when a number of points have simply been entered as "excellent," "good," "fair," "poor," "bad," or "very bad," or, by such a method, to compare conditions found at different places or at the same place at different times. With the score card this is easily accomplished. Moreover, it is possible to include in the score card far more points for detailed observation than in any other system. Again, when using the score card, the inspector is absolutely committed to his record, thus eliminating almost completely all danger of his being influenced by either favor or prejudice.

Although every effort was made from the start to have the dairymen understand that the campaign for pure milk meant as much to them as to us, and to have them feel that we wished to assist them in every way in building up their places, some few of them were hostile from the beginning. It was, after all, not to be wondered at that these men, accustomed all their lives to conducting their business absolutely without outside interference, should at first have resented being told that they must do certain things, and, as was also most natural, many of them held the man who was the mere instrument of carrying out the law responsible for the changed state of affairs rather than the law itself, or more exactly, rather than the universal and growing demand for better conditions of milk production. For this reason, some few of the dairymen sought to visit their wrath on our Dairy Inspector, though in the eight months of this work no instance of unfairness on his part has come to our notice.

The history of what has been accomplished in the eight months since this work was started by our Department would make a long story, if told in detail, as well as a most interesting one. The necessarily short limits which can be given it in a general report of this kind will not permit of going into details.

Of course, what has been said above must not be taken to mean that all dairy farms were bad at the start or all the dairymen difficult to deal with. Though there is not a place which has not since adopted a number of our suggestions, much to their advantage, many were found in quite fair condition at the start, but there are now at least fifteen dairy farms around Richmond which are in much better condition than was the best one eight months ago. The vast majority of the dairyman have cooperated excellently with the Department throughout, while some few who were most antagonistic at the start are now most friendly.

For the first month our efforts were confined largely to getting the scores of the various places and to the attempt to bring about improved conditions by explaining to the producers the reasons why these changes should be made, and especially, by showing them the dangers of dirty milk and the benefits which they themselves would derive from complying with our requirements. The Dairy Division of the United States Department of Agriculture was good enough to allow Dr. Santee, to whom reference has been made above, to return to Richmond two weeks after his first visit and spend five days going around with our Dairy Inspector and instructing him, not only in the use of the score card, but also in the best methods of bringing about improved conditions. The thanks of the Richmond Health Department cannot be too strongly expressed both to Mr. Webster, Chief of the Dairy Division, and to Dr. Santee for the invaluable assistance thus given us in this work.

#### SUSPENSION AND REVOCATION OF PERMITS.

When it was found at the second visit to any place that no attempt had been made to meet our requirements, the Dairy Inspector reported this fact to the office. The case was



then considered by the Chief Health Officer and the Inspector of Milk and Food Supplies, the Dairy Inspector's report and score on the place in question being taken as the basis of action, and if it was thought that the milk from any place was likely to be dangerous under existing conditions, a letter was at once sent, signed by the Inspector of Milk and Food Supplies and "approved" by the Chief Health Officer, giving the man a certain number of days (usually fifteen, unless very radical changes were demanded, in which case more time was allowed) to meet our requirements, under penalty of having his permit suspended. Fortunately, on starting this work, we found that our pure food ordinance (which had been passed in June, 1904, but the provisions of which in certain respects had never been fully put into force) gave us ample power to suspend or revoke without notice the permit of any dairy or dairy farm which was found in an insanitary condition. This extreme penalty has never been invoked, as we have always served notice first and given every man a chance to meet our requirements.

One secret of success in this work has been the complete system of records. Our score cards have a margin reserved for binding. Each score receives a serial number, and this is entered on a card, of which there is one for each producer, with the date and the score under different headings. It is thus possible to refer to every score of any producer in a few minutes. A "1 to 31" index, in which is at once entered every warning notice, enables the inspector to visit each place promptly at the expiration of the time given. Thus it was soon learned that if a notice was received from our office to the effect that a permit would be suspended at a certain time unless conditions were improved, when that time was up the inspector would certainly be there and action would be taken.

#### RESULTS.

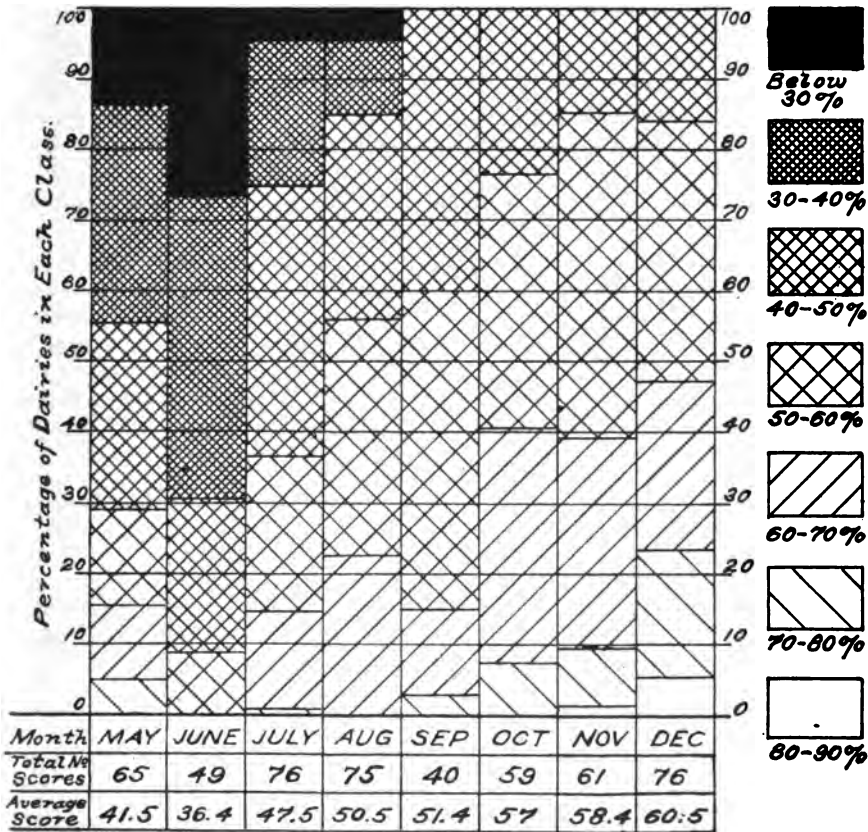
The improvement which has been brought about in eight months is immense. Some conception of what has been accomplished may be gotten from the report of the Dairy Inspector, elsewhere in this report. I have arranged his figures, giving the *actual number* of dairies in each class, month by month, in the following table to show, for purposes of more accurate comparison, the *percentage* of all places visited which fell in each class.

*Table Showing the Percentage of Dairy Farms in Various Classes During the First Eight Months of Dairy Inspection, 1907.*

CLASS	PERCENTAGE OF ALL DAIRIES INSPECTED FOR THE MONTH WHICH FELL IN EACH CLASS.							
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Scoring below 30.....	13.8	26.5	3.9	4.0	.....	.....	.....	.....
Scoring between 30 and 40.....	30.8	42.9	21.0	10.7	.....	.....	.....	.....
Scoring between 40 and 50.....	26.2	22.4	38.2	29.4	40.0	23.7	14.8	15.8
Scoring between 50 and 60.....	13.8	8.2	22.4	33.3	45.0	35.6	45.9	36.8
Scoring between 60 and 70.....	10.8	.....	13.2	22.6	12.5	33.9	29.5	23.6
Scoring between 70 and 80.....	4.6	.....	1.3	.....	2.5	6.8	8.2	18.4
Scoring between 80 and 90.....	.....	.....	.....	.....	.....	.....	1.6	5.4
Average of all scores for the mo...	41.5	36.4	47.5	50.5	51.4	57.0	58.4	60.5

The same thing is shown graphically in the following diagram. In explanation of the apparent retrogression shown in the June scores, it must be explained that during that month our Dairy Inspector confined his attention almost entirely to those places which had been found in worst condition. Those which scored better in May did not go back in June, but, on the contrary (as shown by their July score), they improved very substantially. They were simply not visited in June.

**DIAGRAM SHOWING IMPROVEMENT IN  
DAIRY SCORES  
DURING FIRST EIGHT MONTHS OF DAIRY INSPECTION,  
MAY-DECEMBER, 1907.  
HEALTH DEPARTMENT RICHMOND-VA.**



**EXPLANATION.**—The above diagram shows graphically the improvement in the scores of the dairies supplying milk to the Richmond market during the first eight months of dairy inspection. In May, only 29.3 per cent. of all the places visited scored over 50 and in June only 8.2 per cent. of them were above 50 (the lower result in June being explained above). In December, 84.2 per cent. of all the dairies visited scored over 50. At the start there were many places scoring under 40 and even under 30, some being under 20. At the end of the year there were no places scoring under 40. The increase in the number of places scoring above 70 (some of these being above 80) during recent months is marked. These places represent an enormous improvement over anything found at the beginning of the work, and it is worthy of note that of the four places scoring above 80, two were good places at the start, while the other two were among the lowest of all—one being actually the very lowest.

## BACTERIOLOGICAL EXAMINATION OF MILK.

Along with inspection of the dairies, regular bacteriological examinations of milk samples collected from the wagons in the city were made by the Chemist of the Department. His report is herewith submitted. It will be noted that during the summer months and in the early fall, bacteria ran very high, in spite of constantly improving conditions of cleanliness of production. It is well known that cold is equally as important as cleanliness in the production of milk of low bacterial content, and last summer we labored under the serious difficulty, our work starting only in May, of having to face the fact that none of the farmers had ice available for cooling their milk. This made it inexpedient to adopt a temperature standard lower than could be attained by the use of spring water, which, in the neighborhood of Richmond, is about 58° Fahr., thus making it impossible to cool the milk, with the most approved cooler, below about 61° or 62°, and, even in jacketed cans, it would be well on to 70° on a hot summer day by the time it reached the consumer or the central dairy in Richmond.

### TEMPERATURE STANDARD.

A provisional temperature standard of 70° was therefore adopted, although it was fully realized that this was not low enough to check the growth of bacteria effectually. In November, on my advice, the Board of Health adopted a rule that after May, 1908, all milk produced for sale on the Richmond market must be immediately cooled to at least 50° Fahr., and maintained at that temperature until delivered to the customers. A circular letter was sent to every producer acquainting him with this rule, and advising him to make provision for cutting and storing ice at the first freeze. We have recently (February 7th) had weather which has enabled all farmers to make ice who cared to do so.

Altogether, the results of our first eight months of work in the sanitary improvement of the milk supply have been excellent. A visit to the dairy farms around Richmond by anyone who was familiar with conditions as they existed up to last May is all that is necessary to show the immense improvement which has been brought about.

It can be stated with the utmost confidence that, with the improvements already made and the disposition which almost all of our producers are showing to go ahead far beyond the point of meeting our minimum requirements, the milk supply of Richmond will very soon be unsurpassed by that of any city in the country.

### CARE OF MILK IN THE HOME.

This Department has endeavored from the very start of the campaign for pure milk to impress on the public the important fact that only part of the responsibility for clean milk lies with the dairymen. If carelessly handled after it is delivered in the home, the best milk becomes capable of producing disease. Of course the first step was to endeavor to have clean milk delivered to the people, as without this no amount of care on the part of the individual could do away with its dangers.

Realizing the above facts, in July a circular on "Care of Milk in the Home" was gotten out by this Department. Every distributor of milk was furnished with a sufficient number of copies of this circular for distribution among his customers, with the request that they leave one at each house at which they delivered milk on a certain day, July 13. In this way every housekeeper was furnished with this circular on the same day, besides which all of the daily papers were good enough to print it in full on the same day and also to direct attention to it editorially. It is believed that this circular, about 17,000 copies of which were put out, did a great deal of good, not only directly, by having certain important precautions carried out in the homes, but also indirectly, by showing the milk

people that the Department was not disposed to place on their shoulders the entire responsibility for the harm done by badly handled milk.

This circular attracted considerable attention, being either copied in whole or in part, or otherwise noticed, in a number of bulletins issued by the health departments or the food commissions of other places. At the present time the Dairy Division of the U. S. Department of Agriculture is getting out a similar circular on care of milk in the home.

#### PLANS FOR FUTURE MILK WORK.

It is fully realized that what has thus far been done is but a beginning. So far as the producers are concerned, the chief thing still to be done is to secure proper cooling, and this, as mentioned above, will be required after May 1st. Tuberculin testing is a thing for the future, but, great as its importance, it is, after all, of less moment than cleanliness and cold. The general growth of the sentiment among the most advanced farmers that it is *to their own interest* to weed out tuberculosis from their herds will, it is believed, bring about the necessary reforms in this matter. The delivery of milk in bottles is another matter which we are disposed to leave to the growing demand for this step. The question of bottled milk *vs.* can milk is not, as is usually assumed, to be decided altogether in favor of the bottled article.

There are several evils in connection with the milk supply of Richmond which will demand attention in the immediate future. One of these is the number of private cows kept in the city, from which milk is sold over the back fence. There is no way of ascertaining accurately, with our present force, the exact extent of this evil, but it is a matter of common knowledge that herds of cows kept in the city (one to the house in most cases, and driven each day to some indifferent pasture, in which they often stand up to their bellies in grossly polluted water and from which they are driven at nightfall to their owners, to be milked while overheated and with their udders in a most filthy condition) is large. We have asked for an additional appropriation this year to extend the work of sanitary improvement of the milk supply. As soon as this money is available, an additional inspector will be put to work, and one of his first duties will be to locate these privately owned cows and see that the sale of milk from them is discontinued unless their owners will comply with our requirements, which it is scarcely likely that any considerable number of them will do.

#### MILK SOLD AT GROCERY STORES.

Another great evil, to which attention was called in last year's report, is the sale of milk by small groceries, where it is kept under very bad conditions, and from which it is only too often gotten for the baby. This evil will have to be corrected, though the best means of doing so has not yet been decided on. At present we have only one form of permit, which covers both milk and other food supplies. This should be changed, and no one should be allowed to sell milk without a special permit.

#### INSTRUCTION IN CARE OF INFANTS.

Closely related to the question of milk supply is that of instruction of mothers in the care of their infants. While we believe that impure milk is at the bottom of much of the illness and many of the deaths among infants, especially during the summer months, still this is by no means the only cause of preventable illness and death among them. Ignorance is right now probably responsible for over half of the trouble, and one of the plainest duties of the Health Department is to instruct mothers on this subject. Plans for this have not yet been formulated, but they will certainly include the issuing of circulars of instruction on the subject, while the advisability of having a district nurse, under this

Department, visit the homes in selected cases and give personal instruction, will be considered.

For example, our partial investigations last summer showed that a large proportion of the fatal cases of infantile diarrhea occurred among infants fed on condensed milk, and it was further found that in many instances the cause of death was simply starvation. This was especially so in the colored race, among whom, according to our statistics (not yet sufficiently worked up for publication), infant mortality is high all the year around, as is most natural if underfeeding and not milk infection is the chief factor. All these matters will be further followed up during the present year.

#### TUBERCULOSIS.

Although the fund asked for by the Health Department for starting in on the tuberculosis campaign was included in the annual budget, and thus became available about the middle of March, the press of other work (especially the campaign for pure milk, which proved to be far more time-consuming than had been anticipated), and also the difficulty which was experienced in getting suitable quarters for the tuberculosis dispensaries, made it impossible to start actively on this work until very late in the year.

Before active work was begun, however, a number of minor matters in this connection had been gotten in fairly satisfactory shape. In August, 1906, tuberculosis was made a reportable disease by an ordinance passed by the City Council on the request of this Department. On the form for reporting these cases there was included a line in which the attending physician was asked to allow the Department to send to the patient, either directly or through himself, a circular of "Information for consumptives and those living with them." A number of these circulars were distributed in this manner.

Every case of tuberculosis reported to this office was entered in a card index, arranged by streets and also by names, and this index has been kept up to date as far as possible, by removing from it the cards of those who die and by requesting the attending physician to acquaint us with all changes of address and with the names of patients who pass from under his care.

This, with the free examination of sputum, which has been very liberally taken advantage of by the Richmond profession, made at least a good beginning in connection with tuberculosis. Besides these things, every house in which a consumptive died or from which we were informed that one had moved was disinfected by the Department.

#### TUBERCULOSIS DISPENSARIES.

Shortly after the appropriation for 1907 became available, the Board of Health approved the plans of the Chief Health Officer for the establishment of two tuberculosis dispensaries, one for whites and the other for colored patients.

After considerable difficulty in finding suitable quarters for these dispensaries, on account of the wide-spread prejudice and exaggerated fear of the disease, rooms were secured at the Old Ballard House, 1408 East Franklin Street, for the white dispensary and at 412 North Third Street for the colored dispensary. Use of the rooms at the Old Ballard House was given without charge by the Associated Charities, who had occupied the building for some time, contingent upon the possibility of our having to give the rooms up at any time, in case the building passed from their control at the sale of the property, which was then in litigation. Since then the sale has taken place and the building was bought by the Associated Charities. The thanks of the Department and of the City are due this organization, and especially to the Rev. James Buchanan, its Executive Secretary, for their liberality in placing these rooms at our disposal without cost. The rooms at 412 North Third Street cost us \$20.00 per month.

After securing quarters, several weeks were consumed in carpenters' and plumbers' work and in getting the necessary furniture and equipment. The dispensaries are plainly but adequately furnished. Each has a cheerful waiting room, two dressing rooms (or booths), an examining room and a "dark room" for throat cases.

The following attending staffs were appointed by the Board of Health from among the doctors who volunteered their services for this work:

*Downtown (white) dispensary:* Dr. B. L. Taliaferro, *Chief of Clinic*, and Drs. W. S. Beazley, W. H. Coffman, B. A. Hord, W. H. Parker, Douglas VanderHoof, with Dr. C. M. Miller, throat specialist.

*Uptown (colored) dispensary:* Dr. T. A. Parker, *Chief of Clinic* and Drs. Greer Baughman, T. B. Leonard, J. Garnett Nelson, McGuire Newton, J. R. Williams, with Dr. A. C. Palmer, throat specialist.

Dr. A. C. Palmer has since tendered his resignation as throat specialist to the colored dispensary, but his successor has not yet been chosen by the Board of Health.

The Department has been especially fortunate in securing the services of these men, who are among the ablest practitioners in our city, and a considerable proportion of whom have for some years paid special attention to the study and treatment of tuberculosis. The thanks of this Department and of the City are due the doctors of the dispensary staffs for the excellent service which they have already rendered, especially as they received no remuneration for their labors.

#### DISTRICT NURSES.

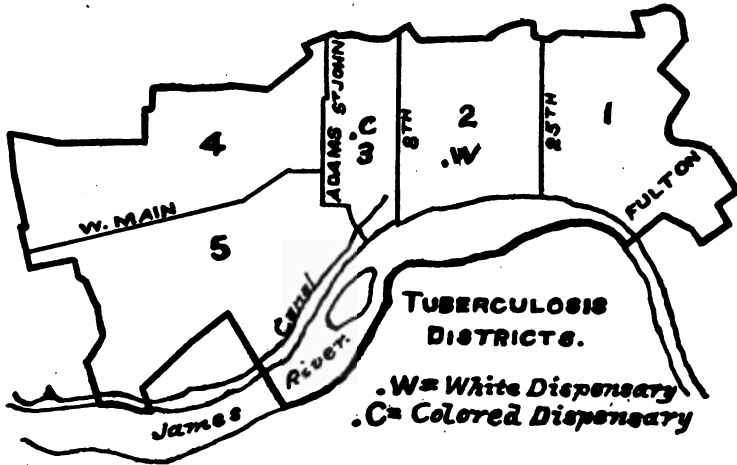
In the dispensary treatment of tuberculosis it is recognized that the chief difficulties lie in getting the patients to attend regularly and in getting them to follow directions explicitly, failure in either of which particulars is, of course, fatal to success. It is further generally recognized that both these difficulties are best met by having a proper staff of nurses, who are present each day during dispensary hours and who visit the patients in their homes between times.

Fortunately, there already existed in Richmond the Instructive Visiting Nurse Association, which had for some years been doing most excellent work among the poor of the city. This association already had a staff of four nurses, and arrangements were made to have this organization take charge of the instructive nursing in connection with our tuberculosis work. As it would obviously have been impossible for one nurse to visit all our dispensary cases, if the dispensaries proved to be at all well attended, an arrangement was made with the Association whereby we would give them, at the start, an extra nurse, and they would agree to have a nurse in attendance at each dispensary every day and also see that every patient was visited at home at least once a week. It was further agreed that if it was found that the time given by these five nurses was more than equivalent to the entire time of one nurse, the Board of Health would consider giving them another nurse. This arrangement has proved mutually satisfactory.

The plan has enabled the Health Department to accomplish results which would have been difficult, or even impossible, to attain by any other method. Without some such arrangement we should certainly have been forced to have at least two nurses from the start, while to have been compelled to direct the details of their work instead of having this done for us by the Chief Visiting Nurse, Miss Cabanis, would have involved a serious loss of time from other necessary work and could not possibly have been as successful. Moreover, I exceedingly doubt whether we could have found other nurses with the splendid qualifications for this line of work possessed by these young women who had, for several years, at considerable pecuniary sacrifice, devoted themselves to district work, bringing health, comfort and some degree of appreciation of the decencies of life to large numbers from the very classes from which our tuberculosis cases will be largely drawn.

From the standpoint of the Instructive Visiting Nurse Association the arrangement has been equally beneficial and desirable. This official recognition of their work has its advantages, which they appreciate. Moreover, their field of usefulness has been just so much increased, and this seems to be the highest aim in life of the district nurse.

In order that every patient should always be treated by the same doctors, and should always find at the dispensary the same nurse who would have charge of his case at home, the city was divided into five districts, as shown in the following outline map and schedule.



District No.	BOUNDARIES	Day for White Patients (Dispensary at 1408 East Franklin Street.	Day for Colored Patients (Dispensary at 412 North Third St).
1	Entire City east of Twenty-fifth street.....	Wednesday.	Monday.
2	Between Twenty-fifth and Eighth streets.....	Thursday.	Tuesday.
3	From Eighth street to Adams and St John streets.....	Friday.	Wednesday.
4	West of Adams and St. John streets and north of Main street.....	Monday.	Thursday.
5	West of Adams and St. John streets and south of Main street.....	Tuesday.	Friday.

These dispensaries were opened on November 25th, and patients were present every day from the start. Up to the end of the year there were 41 white cases and 37 colored cases who had come for treatment, or 78 in all. Most of these have been regular in attendance since their first visit, but a few were found not to have consumption, while a few who had the disease have dropped out for one reason or another.

#### OBJECTS OF DISPENSARY TREATMENT.

Briefly stated, the objects which the dispensary treatment of tuberculosis aim to accomplish are twofold: (1) to cure as many cases as possible at a minimum cost and (2) to instruct a large number of persons who have tuberculosis in measures necessary for the protection of others.

The treatment followed at our dispensaries is along the hygienic and dietetic lines now universally recognized as affording the best hope for the consumptive. The gospel of "the outdoor life" is preached continually, the daily routine of the patients' lives is looked

after as far as possible, and they are instructed in proper feeding. Drugs are resorted to only to meet symptoms and to satisfy the patients themselves. Tonics, cough sedatives and cathartics, as indicated, constitute the chief drugs used. All medicines are given free, at a minimum cost to the city, as those which do not come in the form of pills or tablets are put up at our laboratory, the drugs and bottles being purchased in quantities. Dr. James M. Whitfield, our chemist, who is also a graduate in pharmacy, has voluntarily attended to this matter for us, showing his usual willingness to be of help to the Department in every possible way, even when rendering services not demanded of him.

#### THE PROBLEM OF PROPER NOURISHMENT.

Before this work was commenced it was recognized that there was one very difficult problem to be met. The basis of modern treatment of tuberculosis is founded on (1) life in the open air for as many hours a day as possible, (2) abundant food—especially milk and eggs—and (3) rest as long as the disease is active. Milk, eggs, and other nutritious food must be regarded as the real medicines of the consumptive. But, with a very large proportion of the cases which come to the dispensary, the problem of getting enough of even very simple food, to say nothing of extras, is a difficult one, especially if another of the essentials of treatment—rest, which means abstaining from work—is also followed.

Hence it is evident that, if cures are to be effected, the eggs and milk must be supplied to the patients from some source. The officers of the Health Department have spent many an anxious hour over this question, in the endeavor to decide whether to devote part of the tuberculosis fund to this purpose. We realize that it will, doubtless, to a certain extent, be abused in spite of all precautions. On the other hand, it is also believed that, by restricting the giving of milk and eggs to those patients who most absolutely need them and who are yet as absolutely unable to purchase them themselves, and by keeping as strict supervision over their proper use as possible, through the visiting nurse, the abuse will be reduced to a minimum. Of course, where a mother with tuberculosis sees her children in poverty and insufficiently fed while she has (to that household) luxuries of milk and eggs, if some portion of these goes to her hungry little ones, the recording angel would hardly lay this to dishonesty. In his book, I imagine, an altogether different entry would be made!

We have not yet settled this vexing question, but it must be met sooner or later. It has been thought wisest to wait until we shall have accumulated a considerable amount of information as to the improvement brought about without the giving of milk and eggs to the poorest cases. Then, if it is found that results are not as they should be; that we are not getting the percentage of improved and arrested cases or the gains in weight that we know can be gotten, we may commence giving out a little and watching results. With our complete system of records, the data will speak for themselves, and if the results are good, our position will be unassailable; and public sentiment, as well as the sentiment of the City Council cannot fail to back us up.

#### DISPENSARIES ONLY A START.

Of course the establishment of our dispensaries is to be regarded as but the beginning of the campaign against tuberculosis, the greatest scourge of modern life. This is recognized everywhere as the first logical step to be taken by cities when they awaken to their responsibility in dealing with this great problem. Later on, the sanatorium for incipient, curable cases and the isolation hospital for advanced, incurable cases will have to come, but even then the dispensary must continue to reach by far the greater number of cases; for it must always be that that the major portion of the victims of this disease either cannot or will not leave their houses, even when greater hopes of cure are held out to them.



Until the day arrives (and it is now apparently far in the future) when States will recognize the economy of making some arrangement for incipient cases of consumption whereby not only will the consumptive be maintained for the few months necessary to effect a cure and restore him to society as a producer, but also his family will be looked after during this time, the dispensary, which enables the consumptive to continue work—although it is unwise for him to do so—will remain the only hope for a large class of cases.

Besides our dispensary work, we purpose in the near future formulating plans for the systematic and regular instruction of the public, in all walks of life, on the subject of tuberculosis, as well as, we hope, along other sanitary lines.

#### NATIONAL TUBERCULOSIS EXHIBIT.

A splendid start was made in the direction just mentioned by having the tuberculosis exhibit of the National Association for the Study and Prevention of Tuberculosis here for the week of December 16th—21st. This exhibit had been at the Jamestown Exposition until its close, on November 30. It was brought to Richmond under the auspices of a special Committee on Tuberculosis Exhibit, headed by the Health Department of Richmond and including the following organizations: Civic Improvement League, State Board of Health, Manchester Board of Health, Richmond Academy of Medicine and Surgery, Associated Charities, Instructive Visting Nurse Association, Union League Club, Chamber of Commerce, Business Men's Club, Travellers' Protective Association, Richmond Educational Association, Council of Jewish Women, Federation of Mothers' Clubs, and Representatives of Richmond City Government.

Less than two weeks were available from the time the question of bringing the exhibit here was first considered and the time the doors were opened to the public, but, although the time was short and the exhibit had to be transported from the Exposition (not in itself in easy task, as other exhibitors had been vainly trying for a month to have cars put at their disposal), the necessary funds (slightly over five hundred dollars) had to be raised and the hall engaged and put in readiness, programs arranged and printed and a campaign of publicity worked up—still all was in readiness at the opening.

Altogether, the exhibit was an unqualified success. During the six days that it was here there was an attendance of 11,517 by actual count. Besides the exhibit itself, consisting of photographs, models, charts and diagrams showing the principal points in the causation, prevention and cure of tuberculosis, there were hourly illustrated talks by Mr. E. G. Routzahn, Director of the Exhibit, and three times a day there were stated addresses on various phases of the tuberculosis question. As an evidence of the enthusiasm which was aroused by the exhibit, the remarkable fact may be cited that of fifty-six speakers on the program (including the Governor of Virginia, the Mayor of Richmond, Dr. John S. Fulton, Director-General of the International Congress on Tuberculosis, and numbers of our most prominent physicians, ministers and business men) but five failed to give the addresses assigned to them. Not only was an immense amount of enthusiasm aroused throughout the city at the time of the exhibit, but ever since then the Department is regularly in receipt of inquiries as to the proper management of tuberculosis.

#### SANATORIUM AND HOSPITAL FOR TUBERCULOSIS.

During the present year the Department will endeavor to expand somewhat the work on tuberculosis. First, however, it is most essential that those things which we are already doing be gotten to the highest point of efficiency. A good deal still remains to be done in connection with the dispensaries in order to reap from them the full benefits of which they are capable. Personally, although the necessity of ultimately having a sanatorium for incipient cases and a hospital for incurable cases is not open to discussion, I am not in

favor of attempting to open either a sanatorium or a hospital for tuberculosis under the control of the Department in the very near future. They must come later on as part of a complete plant for dealing with this problem, but the year and a half that I have been in office has not been sufficient for me to get into shape a number of most important matters which must be attended to.

Either a sanatorium or a hospital would necessarily consume a very large part of the time of the health officer, both in its establishment and in supervision of its workings (especially if situated, as such institutions should be, in the country), and this time I do not feel could be at present spared without the Department's suffering in other respects or without the risk of having failure in many things already inaugurated but still dependent upon constant and close supervision for their successful maintenance and operation.

The Committee on Relief of the Poor has under consideration the erection of a tuberculosis pavilion at the City Home. If this is done, it will afford accommodations for a few cases at least, without entailing any extra work on our own Department.

#### INTERNATIONAL CONGRESS ON TUBERCULOSIS.

I heartily urge that the Board of Health at once take the necessary steps looking to proper representation of the Richmond Health Department at the International Congress on Tuberculosis, which will be held in Washington next fall, from September 21st to October 12th. At this Congress, in which every nation in the world will be represented, the exhibits and addresses will cover every phase of the tuberculosis question, and Richmond should certainly be represented. His Excellency the Governor of Virginia has issued a call upon all officials throughout the State, and, although our work in Richmond has only just begun, we should have enough to make a fairly creditable showing.

The general awakening, over the entire civilized world, to the importance of tuberculosis is most promising of results in the future. This disease, which causes more deaths than any other affliction of the human race, which claims its victims at the period of their greatest usefulness and which is, withal, preventable, must more and more receive the serious consideration of every community with any pretense to civilization or with any instinct of self-preservation. The last legislature of the State of Pennsylvania appropriated the sum of one million dollars (\$1,000,000) for tuberculosis.

#### THE FINANCIAL ASPECT OF TUBERCULOSIS.

The following table has been made to show merely the pecuniary side of the tuberculosis question. Calculated for the year 1906, it was shown at the tuberculosis exhibit when it was in Richmond, and at that time Mr. R. S. Tuck, a prominent insurance official, who had prepared an estimate himself, purely from the standpoint of a business man, stated publicly that he considered our estimate far too low. Yet \$1,600,000 is no mean sum to be needlessly sacrificed in a single year to the ravages of one disease. The sum is greater than the entire taxes paid into the city treasury during the same period. The value of human life at different age periods is taken from a paper by M. O. Leighton in *Popular Science Monthly*, January, 1902, while the wage-earning capacity at various ages is put down to a figure sufficiently low to meet all possible objections. The same can certainly be said of the estimate of the direct cost of illness..

## WHAT CONSUMPTION COST RICHMOND IN 1907.

## (1) Value of the 260 lives lost:—

Age at Death (Years.)	No. of Deaths.	Estimated Value of Life at Given Age-Period.	Value of Lives Lost.
0- 5	5	\$1,500	\$7,500
5-10	2	2,300	4,600
10-15	5	2,500	12,500
15-20	33	3,000	99,000
20-25	62	5,000	310,000
25-30	30	7,500	225,000
30-35	33	7,000	231,000
35-40	32	6,000	192,000
40-45	15	5,500	82,500
45-50	7	5,000	35,000
50-55	7	4,500	31,500
55-60	14	4,500	63,000
60-65	6	2,000	12,000
65-70	4	1,000	4,000
70-75	5	1,000	5,000

Total value of the 260 lives lost..... \$1,314,600

## (2) Value of the wages lost by those who died, assuming a loss of one year's time from work preceding death:—

Age at Death (Years.)	No. of Deaths.	Wage-Earning Ca- pacity per Annum.	Value of Wages Lost.
15-20	33	\$200	\$6,600
20-25	62	400	24,800
25-30	30	500	15,000
30-35	33	500	16,500
35-40	32	500	16,000
40-45	15	500	7,500
45-50	7	400	2,800
50-55	7	300	2,100
55-60	14	200	2,800

Total value of wages lost by those who died ..... \$94,100

## (3) Cost of illness of those who died, assumed at 50 cents per day for one year of illness, or \$180.00 a year for each of the 260 decedents..... 46,800

(4) Loss of wages of cases present in the city during 1907 but who are still living. A conservative estimate places the number of cases in Richmond at four times the number of deaths; that is, there were 780 cases that did not die. Assuming the same age distribution and wage-earning capacity as for the fatal cases, and assuming a loss of only one-third of their time, this loss was..... 94,100

(5) Cost of illness of the 780 cases still living, assumed at 25 cents a day, or \$90.00 a year..... \$70,200

GRAND TOTAL OF WHAT CONSUMPTION COST RICHMOND IN 1907..... \$1,619,800

The foregoing table also brings out the fact that consumption claims its victims at the prime of life, when from a pecuniary standpoint their loss is most felt by the State and by those dependent on them, and when from a sentimental standpoint their loss is most keenly felt by their loved ones. From a pecuniary standpoint, if we admit that the disease can be controlled to even a limited extent, could any policy be more extravagant than to allow consumption to kill those upon whom so much money has been expended in supporting them to the productive age?

Of the 260 who died from the tuberculosis of the lungs in Richmond in 1907, 205 (or nearly 80 per cent.) were between the ages of 15 and 40 years. There were 688 deaths in Richmond last year, from all causes, between the ages of 10 and 40 years. Of these, 195 were from consumption; that is, consumption was responsible for 29 per cent. of all deaths occurring between 10 and 40 years of age, or 1 death in every 3.5. Stated in a slightly different way, consumption claimed one victim between these ages to every 2.5 dying from all other causes combined.

Terrible as is the mortality from tuberculosis, it is consoling to know that its ravages are each year becoming less. The rate for 1907 was the lowest for the past twenty-eight years, our statistics not yet having been worked up for the years prior to 1880. The world-wide fight against the disease is apparently bearing fruit, and with the enormous awakening of interest and sense of responsibility which is now in evidence, the mortality must steadily decline. The following table gives a comparison for the last two years.

*Table showing Deaths and Death-Rate from Tuberculosis of the Lungs (Consumption) in Richmond for 1906 and 1907.*

	1906*		1907†	
	Actual Number of Deaths.	Death-Rate per 100,000	Actual Number of Deaths.	Death-Rate per 100,000.
White.....	102	188	117	164
Colored.....	133	402	143	346
Total.....	235	269	260	231

\*Population, 87,246.

†Population, 112,467.

#### FALSE STATEMENTS OF DEATHS DUE TO TUBERCULOSIS.

In connection with the consideration of tuberculosis, I desire to emphasize a fact to which I directed attention in my last annual report, and concerning which it is important that this Department should go on record. Our returns do not show all the deaths that actually occur from consumption, especially among the negro race, on account, to some extent, of the failure to make a correct diagnosis, but, chiefly, on account of deliberate falsification of death certificates. This last is mainly due to the influence of small life insurance policies in industrial companies. On many of these policies payment is not made (or is made only in part) if death occurs from consumption within two years.

I had reason last year for believing this to be a real factor to be dealt with, but during the year just ended we have been able to detect actual instances of this sort, since our records are now in such shape as to show up cases of this kind where a second doctor—and one moreable or more conscientious—has seen the case at any time shortly preceding death. Something must be done to correct this evil. If our ordinances are not now sufficient to impose a heavy fine for deliberate misstatements on death certificates, they should be made so without delay.

I desire this Department to go on record in this matter because correction of this evil will, in a way, be to our own disadvantage, since it would, if the practice is now very extensive, cause an apparent increase in the tuberculosis death-rate when this abuse is corrected. Thus, even after we shall have succeeded, by a vigorous and well-sustained campaign against tuberculosis, in gradually lowering the mortality from this disease, it may well be that the lives thus saved may be more than counterbalanced by having the true cause of death stated in cases in which they would have been, as matters now stand, assigned to some other cause. The carpers and the doubting Thomases, who cannot now be convinced that tuberculosis can be checked, will consider it a mere illustration of the flexibility of statistics if we contend that there has been an *actual* decrease in tuberculosis although the *reported death-rate* remains as high or is even higher.

#### TYPHOID FEVER.

The 1907 mortality from typhoid fever was the lowest of any year on record in this Department. No other single disease has been given so much study by the Health Department during the past year. The problems presented by typhoid fever are as complicated as they are important. Ever since June 3d, when the Medical Inspector went into office, every case of this disease has been carefully investigated as soon as reported to this office. In the carrying on of this work, the fullest possible data were secured in each instance, not only in relation to the possible origin of the case itself but also in reference to limiting the spread of the infection. The blank used for this purpose covered the following points:

*Case No., Name, Address, Sex, Age, Color, Occupation, Attending Physician, Date of Taking to Bed, Date of Physician's First Visit, Where Living for Preceding Month, Source of Water Used for Drinking Purposes, both at Home and at Place of Business, Milk Supply, Ice, Shell-Fish and Vegetables, Other Cases in House, in Neighborhood and Where Visiting (if out of Town), Number of Persons in House, Name of Person Giving Information.*

On the reverse side of the blank are the following points, to be personally looked into by the Medical Inspector:

*Water Supply, Sewage Disposal, Are the Stools being Disinfected? If so, How? General Condition of Plumbing (if any), Condition of Premises, Date of Inspection (Signed by the Medical Inspector).*

Below this is space for the following office records of the case:

*Date of Receipt of Physician's Notification. Termination of Illness: Date of Reported Recovery or Death, Laboratory Report and Remarks.*

The data so secured were worked up promptly in many ways. A "spot map" was kept, showing the location of every case in the city, indicated by tacks with different colored heads according to their history and special environment. A chronological chart was kept, showing the date of origin of the cases (which is the most important single point in connection with the study of typhoid fever). A milk chart showed the milk supply of each case. Besides these special charts, all of which were kept thoroughly up to date, the other data on the blank were tabulated each day. Other important work in connection with this disease was the study of typhoid statistics in Richmond for the past twenty-seven years. Since the reports of the Health Department varied much in their accuracy, as well as in the inclusion of non-residents some years and their exclusion other years, the original death certificates were gone over, as far back as 1880, and a new tabulation made.

We are not yet in position to make a full report on the question of typhoid fever in Richmond, but a number of very important conclusions have been reached.

#### PREVENTIVE WORK IN TYPHOID.

During the past summer and fall, it was evident that most of the cases were due to secondary infection, and it can be stated with the utmost confidence that the work done by

this Department served to limit most decidedly the number of cases and the number of deaths from typhoid fever. A number of special foci of infection were discovered and further spread from these checked, while the directions given in every case as to the disinfection of the stools, urine, bed clothing, dishes, etc., during the illness undoubtedly served an excellent purpose, as was shown by the small number of secondary cases which occurred in any one house.

In practically every instance in which secondary infections occurred in any house, it was found that the directions of the Department had been ignored; hence it seems evident that the following of these directions has been effective in most instances. In one particularly aggravated instance, where three cases of typhoid fever in succession (at intervals of almost exactly a month) followed the first case, it was found that the directions given by this Department had been neglected because the attending physician (whose duty it was to have given these instructions of his own initiative) had told the people that such precautions were unnecessary. This family was subjected to the expense and worry of having typhoid fever in the house for nearly five months because of the ignorance or obstinacy of the attending physician. In the future, the propriety of taking action in cases such as this will be considered.

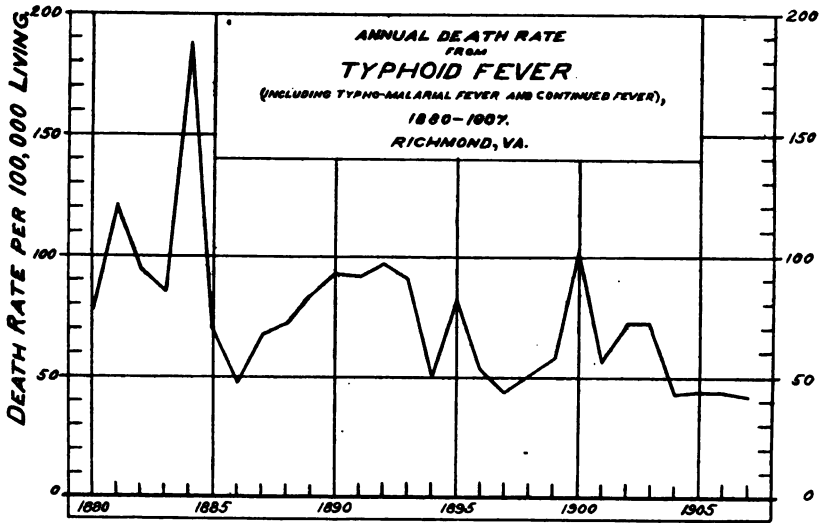
For purposes of comparison, the following table is given, showing the number of deaths and the annual death-rate from typhoid fever each year since 1880.

*Annual Death-Rate from Typhoid Fever in Richmond, 1880-1907.*

Year.	Actual Number of Deaths	Estimated Population.*	Death-Rate per 100,000 Population.
1880	49	63,600	77
1881	79	65,379	121
1882	64	67,158	95
1883	59	68,937	86
1884	133	70,716	188
1885	51	72,495	70
1886	36	74,274	48
1887	52	76,053	68
1888	56	77,832	72
1889	68	79,611	85
1890	76	81,388	93
1891	74	81,754	91
1892	80	82,120	97
1893	75	82,496	91
1894	42	82,852	51
1895	69	83,218	83
1896	45	83,584	54
1897	37	83,950	44
1898	42	84,316	50
1899	49	84,682	58
1900	88	85,050	104
1901	49	86,307	57
1902	63	87,585	72
1903	64	88,822	72
1904	39	90,079	43
1905	40	91,337	44
1906	41	92,594	44
1907	47	112,467	42

\*Populations 1880-1900, inclusive, are those of U. S. Census Bureau (census in decennial years and estimates in intercensal years); population for 1907 is that ascertained by special local census following annexation of new territory on December 6, 1906; for 1901-1906, inclusive, estimates are calculated from this special census and the U. S. Census of 1900.

The same facts are graphically shown in the following chart.



It is gratifying to see, from the above table and chart, that the past year had the lowest death-rate from typhoid fever of any year since 1880. Isolated years prior to 1904 showed rates almost as low, but we have now had four consecutive years of the lowest rates in twenty-eight years. Combining the figures as follows brings this out even more clearly.

<i>Period (Five Years)</i>	<i>Average Typhoid Death- Rate per 100,000.</i>
1880-84	113
1885-89	69
1890-94	83
1895-99	58
1900-04	70
1905-07 (3 years)	43
1904-07 (4 years)	43

The above figures and chart, showing such a marked decline in the typhoid fever death-rate in recent years, prove that at least a very considerable part of the higher rates of previous years was due to causes other than water supply, since this remained the same throughout the entire period and was, indeed, receiving more and more pollution as the cities upstream increased in size. Of course all this does not, in itself, prove that a portion of our *present* typhoid at least is not due to water supply. Every city getting its water supply from a surface stream with an unprotected watershed and using it without purification must have some feeling of uneasiness. Analyses of water show much, but the sanitary test—that is, the prevalence of certain diseases, especially typhoid fever—is a far more delicate test. But these facts must be interpreted with the greatest care. If we had changed our source of supply in the early part of 1904, if we had installed filters, or if the settling basins had been then put into operation, the above marked decline in typhoid fever would have been universally accepted as due to this cause and as showing that the water supply had caused the previous higher rate. Unfortunately, no information of a reliable character can be obtained relating to the great epidemic which apparently visited Richmond in 1884, or of the lesser ones of 1881 and 1900. The reports of the Health Department of these years are silent on the subject, beyond the mere statement of the number

of deaths which occurred. In 1884 the greatest number of deaths was in May, strongly suggesting (though in the absence of information it must be a mere surmise) that it was caused by spring freshets. It is much to be regretted that data of a definite character are not to be had, as they would throw much light on our problems of to-day in connection with this disease.

The study of typhoid fever will be regularly continued, and it is confidently believed that it will result in learning a great deal about the causes which are now operative. It must be made clear, however, that the certainty with which a genuine *epidemic* of typhoid fever can be traced to its cause does not apply, as a rule, to the discovery of the origin of such typhoid fever as we had in Richmond last year.

If the results of further study justify it, these will be made the subject of a special report to be published later, in which the entire subject can be handled in a more thorough manner than is possible in an annual report dealing with many other matters.

#### SMALLPOX.

In common with all other localities, Richmond suffers regularly, of recent years, from the indifference which has gradually been growing in this country in regard to vaccination. The mild type of smallpox which has prevailed, for the most part, for some years seems to be largely responsible for this criminal neglect. Not only the general public, but a large proportion of the medical profession as well, seem to have forgotten to a dangerous degree the history of this dread disease, and, to a corresponding degree, to have become indifferent or careless in the matter of vaccination. Physicians should return to the practice in vogue in former years and see to it personally that every infant in families under their care is vaccinated before it is a year old.

Nothing could be more discouraging than the reflection that the only disease known to mankind which we have it absolutely in our power to stamp out forever should continue to exist. Sanitariums labor unceasingly to discover means of prevention of disease, but we can never hope to devise a more perfect preventive of any malady than vaccination is for smallpox. With this disease we do not have to deal, so far as is known, with that element, the "germ carrier," which has within recent years come so to complicate our conceptions of many other infectious diseases and to lessen the certainty with which we can speak of the possibility of eradicating them by isolation of every known case. On the contrary, we believe the statement that every case of smallpox comes directly from a previous case can be made absolutely without qualification, and that, therefore, if every person now living were successfully vaccinated, smallpox would be wiped out of existence for all time. Yet it still continues, on account of the ignorance, carelessness and prejudice of the people. Apparently we shall have to wait until the disease again appears—as it is practically certain to do so sooner or later—in its old, virulent form before the simple remedy of vaccination will again be regarded, as it formerly was, as the most beneficent discovery of medical science.

During the year 35 cases of smallpox were seen by the Diagnostician, Dr. W. J. West, against 183 in 1906. Although the number of cases was thus much smaller, they were so distributed throughout the year that the smallpox hospital was closed for only 132 days—from June 13th to 22d (10 days), July 30th to November 18th (111 days), and from December 21st to the end of the year (11 days). As in 1906, every case of smallpox recovered.

Since the position of Medical Inspector was established (see elsewhere in this report), the rule has been adopted of having him visit every reported case of chicken pox in adults. In this way several cases of mild smallpox were discovered and sent to the hospital. It is believed that this policy has had much to do with lessening the prevalence of smallpox, but as long as the city contains hundreds of persons who will not be vaccinated the disease cannot possibly be eradicated.



The mild type of smallpox now prevalent over the entire country leads to many of these cases being diagnosed as chicken pox, even by many of our older doctors. Health officers everywhere have the same difficulty to contend with. Dr. John T. Wheeler, Director of the Division of Communicable Diseases, New York State Department of Health, says, in a recent address:\*

"Whenever you get a case of eruptive disease in the adult, and you can figure the diagnosis down so that it stands between chicken pox on the one hand and smallpox on the other, call it smallpox and you will be right every time. I will go further than that. If you can throw out smallpox altogether, so that you have only chicken pox and nothing else, still call it smallpox, and you will be pretty nearly right.

"The Department is rather sore over the way smallpox has been mistaken for chicken pox in so many places during the past year and allowed to go on and spread until it becomes quite difficult to manage. This poor mongrel, weak, diluted smallpox, that is smallpox, and isn't anything but smallpox \* \* \* misleads us into thinking it is only chicken pox."

We have seen a few—a very few—cases of chicken pox in adults here in Richmond, but it is very rare. Certainly it is of such infrequent occurrence that we advise every doctor who believes he has a case of chicken pox in an adult, especially if the patient has never been successfully vaccinated, or vaccinated only in infancy, to inform the Department at once. If it turns out not to be smallpox, our diagnostician will take the responsibility of naming it. I must again commend the work of Dr. W. J. West, our Diagnostician, in this connection. During the year a number of very difficult cases have come under our notice, cases in which much depended upon the accuracy of his diagnosis, and in every instance his opinion has been confirmed by the subsequent course of the case. His report, which is hereto appended, shows that of the 100 cases reported to this Department as suspicious, 35 turned out to be smallpox, while an almost equal number (29) were chicken pox, measles coming next, with 15 cases, and syphilis next, with 13 cases.

#### DIPHTHERIA.

Diphtheria threatened to become epidemic towards the end of October, a large number of cases being reported, most of them of a severe type, within a few days. At the last meeting of the Board of Health in that month I advised that the situation be met by two measures: (1) a more liberal policy of distribution of antitoxin and (2) compulsory release cultures.

For some time the Health Department had been furnishing free antitoxin in cases of extreme poverty. This by no means met the situation. The prime importance of administering the remedy at the earliest possible moment is universally recognized, and it was felt that in families of moderate means the cost of antitoxin frequently restrained the attending physician from insisting on its immediate use, except in the most severe and unmistakable cases. Even to wait for the report of the City Bacteriologist in a doubtful case is wrong; yet most doctors would hesitate in such cases to insist on an expense of several dollars when the case might turn out not be diphtheria after all. In this way valuable time was often lost, in which a favorable case might become an unfavorable one. Under the present rule, antitoxin is furnished free, on the written statement of the attending physician that its purchase would be a hardship on the head of the family.

Regarding the release culture in diphtheria, I had recommended this several times before, starting immediately after my appointment as City Bacteriologist, in December,

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\*Proceedings of the Seventh Annual Conference of the Sanitary Officers of the State of New York, October 16-18, 1907.

1905, but the Board had not previously adopted it on account of their doubts as to how the move would be received by the medical profession. With an epidemic facing us, however, the Board promptly adopted the rule now in force, requiring that "*no case of diphtheria shall be released from quarantine, nor shall the warning sign be removed, until two consecutive negative cultures shall have been secured by the City Bacteriologist, the final culture at least to be taken by the Medical Inspector.*"

The prompt adoption of these policies resulted in complete control of the threatened epidemic. Before they went into effect, however, there were four deaths from diphtheria in as many days, thus showing that the situation had not been exaggerated, and it is practically certain that, but for the adoption of these measures, the disease would have spread rapidly.

Since the Department has kept in very close touch with every case of diphtheria, through the Medical Inspector, there was no possibility of the abuse of free antitoxin, especially as it has no value aside from its use in diphtheria. It was found that many of our doctors had never employed the remedy, and in a number of cases the Medical Inspector administered it at the request of the attending physician. Actual observation proved that the prompt administration of antitoxin saved a considerable number of lives that would otherwise unquestionably have been sacrificed. The entire amount spent for antitoxin during the last two months of the year, when the disease was at its height, was only \$190.77, a sum too insignificant for consideration when the results attained are taken into account.

So far from there being any protest from the medical profession on account of the rule requiring two consecutive negative release cultures in diphtheria, this policy has met with the enthusiastic endorsement of the Richmond physicians, since it relieves them absolutely of the onerous task of determining the time of quarantine. In no instance has a doctor resented the taking of the final release culture by the Medical Inspector, while, on the other hand, many of them now have him take all release cultures after the case no longer demands medical attention.

The proficiency and tact shown by the Medical Inspector in dealing with these cases, and with the doctors attending them, have been responsible for the efficient working out of these policies, and there has never been the slightest friction between him and the attending physician. It was believed that the terms of the ordinance creating this office, whereby the Medical Inspector is required to devote his entire time to the duties of his office, would guard against any misunderstandings, and results have amply justified this belief.

#### MEASLES.

Measles was epidemic in Richmond during the early part of the year. An account of this is given in the report of the Medical Inspector (*q. v.*). During the first four months of the year there were reported 1,189 cases. Altogether during the year there were reported 1,226 cases, with 35 deaths, all the deaths occurring within the first six months of the year. Measles is recognized as probably the most contagious of all known diseases, while its general reputation for mildness, coupled with the fact that there are probably hundreds of cases never seen by any physician, makes its control practically impossible. Besides this, at the time when it was at its height last year the position of Medical Inspector had not yet been established, so we had no means of exercising any sort of supervision over the disease. That measles is by no means a trifling matter is evidenced by the fact that the case fatality last year was 2.9 per cent., or one death in every 35 reported cases.

Statistics of all cities show that measles occurs in periodical outbreaks, alternating with years during which but few cases are seen. We have now just been through our "measles year," a large proportion of all susceptible persons have had the disease, and we may therefore count, with reasonable assurance, on relative immunity until a new susceptible population grows up.

## SCARLET FEVER.

There were 47 cases of scarlet fever reported to the Health Department during 1907, all but one being in whites. Not a single death occurred from this disease. Since June we have assumed charge of the quarantine in all cases of scarlet fever. This was made necessary by the fact that it was no uncommon thing for us to receive notice of recovery and request to fumigate within a few days of the receipt of the original notification of the existence of the disease. According to our present rule, whenever notice of recovery is received in less than four weeks from the original report, the Medical Inspector visits the house and examines the patient. If found desquamating, or with any discharge from the nose, throat or ears, quarantine is maintained until these have ceased. Here, again, so far from objection being raised on the part of the doctors, they regard this plan as relieving them of the burden of responsibility for the isolation of the patient, and many of them have now adopted the method of reporting recovery from scarlet fever as soon as their medical services are no longer needed, with the understanding that the Department will assume charge of quarantine after that time until the case is ready to be released.

## DEATHS.

There were 2,652 deaths in Richmond in 1907, of which 1,289 were white and 1,363 colored. The death-rate for the year was slightly higher than in 1906, being 23.58 per 1,000 for the entire population in 1907 against 23.01 in 1906. For whites, however, the rate was slightly lower—18.11 against 18.30. This was more than offset by the difference in the colored rate—32.99 in 1907 against 30.74 in 1906.

The influence of adding 18,615 new citizens to our population (which was equal to almost exactly one-fifth of those in the old city) introduced an element which renders accurate comparison of rates for the two years impossible. The most important single factor which influences death-rates (aside from race, which is not a factor here, the two races being separately considered) is age distribution of the population, and it is but fair to assume that this was considerably altered by annexation, though whether favorably or unfavorably cannot be said.

Although the general death-rate was higher than in 1906, there was considerable reduction in the death-rate from "General Diseases," which class includes all contagious diseases and nearly all diseases commonly regarded as "preventable." As may be seen from Table No. 19, the death-rate from diseases of this class was 5.81 per 1,000, while the year before it was 6.30, a falling off of about 8 per cent.

Respiratory diseases, on the other hand, showed a marked increase, the rate from this class of diseases (which does not include consumption, that being classed under general diseases) being 4.05 per 1,000, against 2.86 in 1906, an increase of about 29 per cent.

## AVERAGE AGE AT TIME OF DEATH.

The average age of all decedents was 34.98 years, or 34 years 11 months and 23 days. The average age of the white decedents was 41.13 years, or 41 years 1 month and 17 days; of the colored decedents, 29.16 years, or 29 years 1 month and 23 days.

These figures show the average age at death for all decedents to have been 25 days less than in 1906. For whites the average age was 2 months and 16 days greater than in 1906; for blacks it was 2 months and 4 days less than in 1906.

All vital statisticians recognize the fact that the average age at death is largely dependent on the age distribution of the total population. Since, as just mentioned above, the age distribution in Richmond was undoubtedly entirely altered by recent annexation, no special deductions can be made by comparing the average age at death with

the preceding year. The figures are calculated in this report for the first time, and will be useful for the future comparison, year by year.

#### MORTALITY OF THE WHITE AND COLORED RACES.

The white death-rate in Richmond for 1907 was 18.11 per 1,000, while the colored rate was 32.99; that is, the colored rate was as 82 per cent. higher than the white! To state it another way, the colored race, constituting only 37 per cent. of our population, had 6 per cent. more deaths.

While the colored death-rate from all causes bore a ratio of 1.82 to the white rate from all causes, in certain classes of diseases the ratio was immensely greater than this. The greatest contrast, excluding those diseases from which the total number of deaths was too small to make a comparison reliable, was from influenza, in which the colored death-rate was 3  $\frac{1}{2}$  times as high in the white race. Next came pneumonia, from which the colored rate was 3  $\frac{1}{2}$  times as high. Respiratory diseases in general, including tuberculosis of the lungs, appear to be the great destroyer of adult negroes. The following table shows the contrast between the white and colored mortality from those diseases and classes of diseases which had the highest general mortality, and also from certain other causes which are of special interest for one reason or another.

*Table Showing the Comparative Mortality of the White and Colored Races from Certain Diseases During 1907.*

CAUSE OF DEATH	No. of Deaths.		Death-Rate per 100,000.		Ratio of Colored Death-Rate to White.
	White	Colored	White	Colored	
Typhoid fever:—					
Including non-residents.....	37	10	52.0	24.2	.46
Residents only.....	26	8	36.5	19.3	.53
Measles.....	19	16	26.7	38.6	1.45
Diphtheria and croup.....	14	2	19.7	4.8	.24
Influenza.....	16	31	22.5	75.0	3.34
Consumption.....	117	143	164.4	346.1	2.11
Pneumonia (lobar).....	80	147	112.4	355.8	3.16
All diseases of the respiratory system (consumption not included), that is Group IV. of the International Classification.....	169	286	237.4	692.3	2.92
All diseases of the respiratory system, consumption included.....	286	429	401.9	1,039.0	2.58
Cancer (of all organs):—					
Including non-residents.....	51	29	71.6	70.0	.98
Residents only.....	42	28	59.0	67.8	1.15
Apoplexy.....	93	76	130.7	184.0	1.41
Organic heart disease.....	94	80	132.0	193.6	1.47
Bright's disease.....	79	49	111.0	118.6	1.07
Heart and Bright's disease combined.....	173	129	243.1	312.3	1.28
Diarrhea, under 2 years.....	72	89	101.2	215.4	2.13
Congenital debility.....	55	67	77.3	162.2	2.10
Senile debility.....	33	16	46.4	38.7	.83
All causes.....	1,289	1,363	1,811	3,299	1.82

The question of the high death-rate among the negro race was discussed at some length in the last annual report of this Department. It constitutes one of the most serious problems with which we, in common with all communities having a considerable proportion of negroes, have to deal. Not only does the enormous mortality among the colored race give Richmond a very high general death-rate, but it cannot be doubted that the large amount of serious illness among them must indirectly affect the health and lives of the whites, since the negroes make up 37 per cent. of our population.

We must clearly face the issue that the first fruits of improved sanitation in Richmond will most probably be seen in a lowering of the death-rate among the colored people, as conditions among them are so much worse at present, but this, in turn, will gradually react on the white race. The links in the sanitary chain connecting the meanest negro hovel with the mansion of the most fastidious white man may be but few—in fact, the connection may be direct, through washerwomen or other help. Look at the matter as selfishly as we may, for our own sakes we must uplift the negro, in sanitary matters as in others. One of the greatest aids in this work will be the intelligent and devoted work of the best members of their own race. When the tuberculosis exhibit was in Richmond last December, one of the most interesting and profitable of the series of meetings was the one at which "Tuberculosis in the Negro Race" was discussed. The chairman at that meeting was a white man and the speakers were one of our leading negro preachers and two of the most prominent physicians of that race. The addresses of these men showed splendid insight into these problems and deep appreciation of conditions as they actually are, not as certain idealists who know little of the negro would have them appear.

#### BIRTHS.

During 1907 there were reported 2,311 births. (See Tables No. 2 and No. 3 for classification.) This is the largest number of births ever reported to the Department in any year since our ordinance requiring births to be reported went into effect in 1900. While annexation naturally played some part in this, it was not the chief factor, as is shown by the rates per 1,000 in the following table.

<i>Year.</i>	<i>Number of Births reported.</i>	<i>Reported Birth- Rate per 1,000.</i>
1900	818	9.62
1901	729	8.53
1902	752	8.77
1903	666	7.73
1904	636	7.35
1905	608	7.00
1906*	1,133	13.00
1907	2,311	20.55

Until the latter part of 1906 the birth returns had been nothing short of farcical. After reorganization in 1906, other and more important matters prevented our giving any great amount of attention to securing reliable returns, yet, as shown above, considerable improvement was brought about. Of course the rate for 1907 is still far too low, but for the past five months it is believed to be within probably ten per cent. of the true rate.

The improvement has been brought about by persistent effort on the part of this office. Every possible means of getting on the track of delinquents has been pursued, whereby we have not only gotten better returns but have also had nearly one hundred midwives register with us, as required by law, and informed of their duties under city ordinance.

#### GREATER RICHMOND.

As has been alluded to in a number of places in this report, a very considerable territory was annexed to the City of Richmond in December, 1906, adding  $4\frac{1}{2}$  square miles to the  $5\frac{1}{2}$  in the old city. A special census of the entire city was taken in June of last

\*Health Department reorganized July, 1906.

year, under authority of the City Council and under the immediate supervision of the Committee on Finance. Every precaution was taken to insure accuracy. The contractor to whom the work was assigned was under bond for the faithful performance of his duty, and each of the enumerators was properly sworn in to do his. There is every reason for believing that the results are as accurate as is possible without the adoption of the plan of having each name entered on a slip and checked up to avoid duplications where a person may occasionally be counted at more than one address. As a further check, Mr. George S. Crenshaw, Special City Accountant and Clerk to the Committee on Finance, went over all additions and personally made an enumeration of a number of city blocks, which he compared with the work of the enumerators and found to be correct.

This census showed Richmond to have a population of 112,467, of which 71,158 were white and 41,309 were colored. The old city was found to contain 93,852, of which 60,407 were white and 33,445 were colored; while the annexed territory showed a total of 18,615, of which 10,751 were white and 7,864 were colored.

This census has been accepted by the Health Department and is used for the calculation of all rates in this report. It is against the fixed policy of the U. S. Bureau of the Census to accept the results of special local censuses under any circumstances. Their estimate of the population of the old city is arrived at by crediting us with an annual increase equal to one-tenth the increase shown between the two preceding decennial censuses, which, in our case, was very small between 1890 and 1900, being only 3,662, or 366 a year, thus amounting to 2,562 for the seven years since the census of 1900. Adding this figure to the population of 85,050 found in 1900, gives only 87,612 for the old city, against 93,852 actually found by our special census. Adding to this 87,612 the 18,615 in the annexed territory (which they accept as being the most accurate figure obtainable), the Census Bureau makes our total 1907 population only 106,227, against the 112,467 found by our special census.

I have considered it likely to be far nearer the facts to accept this special census rather than the estimate of the Census Bureau, and have used the figures of the special census in all tables. Tables 8 and 9 give rates calculated both ways. It is most desirable to use U. S. Census Bureau's estimates, as these are never questioned, while the use of local figures is in so many places a mere subterfuge resorted to in order to publish a low death-rate. This criticism can not justly be made in our case by any one who is acquainted with the facts.

#### PROBLEMS OF THE ANNEXED TERRITORY.

The recently annexed territory has presented many problems to the Health Department as well as to other departments of the city government. The new section, bringing in a population of 18,615, over whom we had no provision for extending our supervision, was a serious matter. What made it especially embarrassing for our own Department was the fact that this increase in population and in territory followed so closely on the reorganization of a few months before. Every effort has been made to meet these increased demands as best we could. As a matter of fact, our force is insufficient in many directions to do this in a satisfactory manner. The new territory is unsewered and has no city water, except in very limited sections. Almost all the houses, therefore, present the dangerous sanitary combination of a shallow wells and dry closets.

To add to our difficulties, the scavenger who was appointed by the Board of Health to look after the cleaning of these closets proved to be utterly worthless, and we were deluged with complaints—and well-founded ones—of his inefficiency and neglect. Fortunately, he was gotten rid of after a few months (during which at least one-third of the time of the entire office force, including that of the Chief Health Officer, was taken up in

listening to tales of his shortcomings), and the annexed territory was divided between two contractors, one for the eastern and one for the western portion. These new men have given entire satisfaction, after they had once accomplished the Augean task of getting matters into shape after months of neglect.

In other respects the new territory will continue to present problems until city water and city sewers shall have been secured, as well as adequate provision for street cleaning. Sanitary conditions in the annexed territory cannot be satisfactory until this is accomplished, and it is earnestly to be hoped that these matters will receive the prompt attention which their importance deserves. During the past summer, for example, this new territory had far more typhoid fever in proportion to its population than was present in the old portion of the city.

And this brings me to another very big question. Even in the old city limits there are an immense number of houses which are still without city water or sewers and are still using shallow wells situated a few feet from their dry closets. Wherever wells are found so located that it is possible for the people to get city water and enter a city sewer the wells are ordered closed, but in a very large number of these cases there is no way for them to get water and sewers. I regard this as a matter of vital importance and one that should be promptly taken up by the City Council and by the Water and Street Departments. I have no way of estimating accurately the number of houses in the city which have neither sewers nor public water supply, but, as a rough guess, I would say that it is not less than 5,000 in all—2,000 in the old city and 3,000 in the annexed territory. This estimate is probably far too low.

This state of affairs is, in my opinion, a serious menace to the health of the community. Open dry closets in a city must be regarded as an ever-present danger, not only to those forced to rely on them and to their immediate neighbors (though these are, of course, the worst sufferers), but also to the entire community. The task of remedying these conditions is a colossal one, but no time should be lost in starting in to conquer it.

#### SANITARY INSPECTIONS.

The reports of the four sanitary officers show an immense increase in the work of sanitary inspection during the past year. The Department has been fortunate in having in these officers men of zeal and energy.

In no direction is the force of the Health Department so insufficient as in the number of sanitary officers. We now have the same number as in 1893, although the city has practically doubled in area since that time and has increased in population 36 per cent.; that is, from 82,486 to 112,467.

Some relief will be gotten if the ordinance introduced by Mr. Umlauf in the Common Council many months ago, providing, for the creation of the office of Assistant Inspector of Plumbing, is finally passed. This ordinance was referred to the Board of Health and recommended by them for passage, since which it has been recommended by the Council Committee on Ordinances, Charter and Reform, but it has been tied up for a long time now in the Committee on Finance\*. If it is finally adopted, this will enable us to have four officers strictly for sanitary inspections instead of, as at present, having one of them take a great deal of his time in assisting the Inspector of Plumbing. It is hardly probable that this will be sufficient; for it is important that these officers should make occasional house-to-house inspections over the entire city. At present their time is completely occupied in investigating complaints, most of them of very trivial matters, having little bearing on the public health, and, moreover, coming usually from the better sections of the city. There should be systematic inspection of those sections of the city from which complaints seldom come, but which undoubtedly abound in conditions which should be corrected.

\*Since the above was written, this ordinance has passed both branches of the Council and now awaits the signature of the Mayor.

## MONTHLY BULLETIN.

Starting with July, the form of the monthly report issued by the Health Department was changed. Prior to that time this report was made up entirely of tables, and experience has shown that, while of value to the few who may wish to compile statistics, such reports are but little read. The Monthly Bulletin now published contains a tabulation of all deaths for the month, by color, sex, age periods and principal causes of death, and a summary of the work done by the officers of the Department. In addition to this, each month there is published a considerable amount of reading matter, dealing with subjects of interest at the special time. The Bulletin has been very favorably received, both by the medical profession of Richmond and by a number of health officials of other places. It is regularly sent to every doctor in Richmond (and serves as a means of keeping them in touch with the local health situation), to the members of the City Council, to the heads of all departments of our city government, to all milk producers supplying milk to the Richmond market, and to several hundred health officials throughout the country. Our mailing list now embraces nearly one thousand names. An addressograph was purchased in December, which saves a great deal of time in the mailing of the Monthly Bulletin as well as in getting out circular letters.

## EDUCATIONAL.

Last year the sum of five hundred dollars (\$500.00) was requested for educational work along sanitary lines. This request was practically the only one which was not granted by the City Council in the budget, hence the matter was not pushed. This year the same amount has again been asked for, with very chance of its being granted. As a matter of fact, no work of a health department is of such fundamental importance as teaching the people something of the elementary principles of sanitation and hygiene. In but little of the work of a health department can the best results be obtained without intelligent cooperation of the people themselves, while in other directions the sole hope of bringing about improved conditions lies in individual action. If we could eliminate from any community every case of ill health and premature death due to ignorance of the simple rules of right living or to neglect to follow them, the results would be revolutionary. This work must be slow, but we should begin it without delay.

If this fund is given to the Department, it is purposed to purchase a stereopticon and lantern slides and to have a number of plain, practical illustrated talks on such subjects as tuberculosis, typhoid fever, smallpox, acute infectious diseases, milk supply from a sanitary standpoint, care of the infant, etc., given in all sections of the city by the officers of the Department and also by some of our practising physicians. A few lectures may be given by prominent sanitarians in one of our large central halls, but these are deemed of less importance than reaching the poor and ignorant people on the outskirts of the city. These classes will not attend a fashionable gathering, but can be gotten at in a less pretentious way through informal talks in churches and schoolhouses. Besides this, it is purposed to get up and distribute pamphlets on a number of matters of sanitation and hygiene. The recent tuberculosis exhibit was so practical an illustration of the possibilities of educational methods that public sentiment now unquestionably is back of us in asking that we be allowed to continue this kind of work.

## PLANS FOR 1908.

So far as can be foreseen, there will be no attempt during the coming year to undertake any very radical advances. Of the work already started, several of the things will demand a great deal more attention before they are in a thoroughly satisfactory condition.



In connection with the milk campaign and the tuberculosis campaign much still remains to be done, as mentioned elsewhere in this report, and in other directions the same is true. We have, therefore, a busy year ahead without branching out to any great extent in new directions.

A few of the matters which will demand attention aside from what has already been mentioned are control of the fly nuisance, the mosquito nuisance and the smoke nuisance. These are referred to as "nuisances," but as a matter of fact the first two have a most important bearing on public health in a very direct fashion and the last in an indirect manner at least.

#### FLIES.

Flies are now recognized as active agents in the dissemination of disease. Their guilt has been conclusively shown in connection with typhoid fever, but, by analogy, they must be regarded as equally guilty in many other directions. One scarcely needs the proof furnished by "plates" showing the development of countless bacteria along fly tracks to realize that these unspeakably filthy creatures, going freely from all manner of contagious diseases and from privy vaults directly to the food of others, must carry infectious material with them.

Flies are known to breed almost exclusively in stable manure, and the rational method of dealing with the question is to have rigid regulations regarding the establishment and maintenance of stables within the city limits. A heavy fine should be imposed on everyone—public liveryman and private owner alike—who has not proper provision for the frequent removal of manure and for its protection during the periods between removals. This matter has been well worked out, and systematic effort on the part of all who keep horses in the city would result in almost complete relief from the presence and nuisance of flies, thereby not only lessening their activity as carriers of disease but also adding to the comfort of all citizens during those months when life in Richmond is not most enjoyable.

#### MOSQUITOES.

The mosquito is another insect pest which must be reckoned with. So far as our present knowledge goes, its role as a disease carrier is limited in our climate to a single malady—malaria. Moreover, this disease is conveyed by only a special kind of mosquito. The entire mosquito tribe, however, is such an unmitigated nuisance that the fight should be carried on against them all, besides which, even where they do not directly carry disease, the discomfort which they occasion is a real factor in the health of a community. Disturbing sleep at a time of the year when rest is most needed to fit one for standing the discomforts of the next day, and interfering with such comfort as can be gotten by sitting out of doors at night, they have much to answer for, and there is no doubt but that a community without mosquitoes is much more able to resist disease than one in which they are prevalent.

Mosquitoes require standing water for breeding. Without this they cannot increase. Last summer, realizing the impossibility of the Street Committee's being able to grade and fill the numberless breeding places in the annexed territory, this Department did a considerable amount of work in kerosening pools and ditches and in instructing the people concerning breeding places on private lots. As a result of even this partial work, a great number of citizens have informed me that they suffered less from mosquitoes last summer than ever before. I am now preparing a circular on mosquitoes and malaria, which will be distributed in the early summer. Even without any increase in our force, we can do a great deal next summer in controlling the mosquito nuisance.

## THE SMOKE NUISANCE.

One has only to stand in the office of the Health Department in the City Hall and look out over the city to see the pall of black smoke which hangs over it at most times, caused by scores of chimneys of manufacturing plants, public buildings, etc., which belch forth their noxious and offensive fumes over our city. At present, I am informed by the City Attorney, there is no general ordinance under which this is declared a nuisance *per se*. Each case can be dealt with only by proving special damage. In certain other cities (Boston and New York, that I know of) the smoke nuisance has recently been completely done away with by the Health Departments.

It has recently been shown that smoke is a real menace to health. But even without this proof the case is serious. Physicians and sanitarians are advising more and more that all persons, sick and well, live as much in the open air as possible. But if the air is rendered dense with smoke, the benefits are certainly less to be counted on. I strongly recommend that the City Council be asked to pass an ordinance placing control of the smoke nuisance under the Health Department. There is no excuse for the existence of this nuisance. Coal, soft coal, *can* be burned in manufacturing plants without producing black smoke, not only to the benefit of the good name of the city but also to the advantage of the pocket of the manufacturer.

## ACKNOWLEDGMENTS.

The Health Department has had the most active support of the medical profession of Richmond, during the past year. Practically all the doctors of Richmond are reporting births and contagious diseases in a very satisfactory manner and in a number of instances they have in other ways shown the most active interest in our work.

The relations between the Board of Health and the Chief Health Officer have been all that could be desired. In a year as active as that just passed, numberless matters have had to be passed on by the Board. Throughout the entire time the utmost cordiality has prevailed. Differences of opinion have been few, and these have never given rise to ill feeling on either side. The hearty support of the Board has made smooth many of the rough places over which the Department has had to travel.

The relations between the Chief Health Officer and the men of the Department have been equally satisfactory and cordial. In no department of the city government, I believe, is there a more excellent spirit of mutual helpfulness than in our own. This has not only contributed to the efficiency of the Department, but has also made the work pleasant to all concerned.

## CONCLUSION.

Altogether, I feel that we may all look back on the year 1907 with considerable satisfaction. Much has been accomplished in the building up of the Department, but more remains to be done. No one can realize so fully as the Chief Health Officer himself, the lines along which we are still weak and the important tasks which must be gotten at in the future. These will be attacked as rapidly as possible, always bearing in mind the necessity, except in cases of emergency, of getting each thing well established and working smoothly before the next is begun.

Respectfully submitted,

E. C. LEVY, M. D.  
*Chief Health Officer.*

## FINANCIAL STATEMENT—SUMMARY.

<i>Account</i>	<i>Appropriation</i>	<i>Expended</i>	<i>Balance</i>
Pay roll.....	\$17,582 50	\$17,495 50	\$ 87 00
Expense account.....	2,700 00	2,333 04	366 96
Sanitary improvement of milk supply....	2,000 00	1,815 00	185 00
Special vaccination.....	5,000 00	4,758 97	241 03
Tuberculosis campaign.....	5,800 00	1,012 16	4,787 84
Total.....	\$33,082 50	\$27,414 67	\$5,667 83
Total appropriation as above.....			\$33,082 50
<i>Reimbursements:</i>			
Unexpended balances as above.....			\$5,667 83
Smallpox, care of patients from outside of the city.....			261 77
Sale of injured horse.....			44 50
Food permits.....			404 00
Total reimbursements.....			6,378 10
Net cost of maintenance of the Health Department for 1907.....			\$26,704 40

## DETAILED STATEMENT OF EXPENSES..

*Pay roll:*

Chief Health Officer .....	\$2,500 00 per annum	\$2,500 00
*Clerk .....	900 00 per annum	890 00
Inspector of Plumbing, 11 months ..	1,100 00 per annum	1,008 34
Inspector of Plumbing, 1 month ...	1,400 00 per annum	116 66
†Medical Inspector .....	1,500 00 per annum	862 50
†Registrar of Vital Statistics .....	1,200 00 per annum	690 00
*Bacteriologist .....	900 00 per annum	837 50
Food Inspector .....	900 00 per annum	900 00
Chemist .....	720 00 per annum	720 00
Assistant Food Inspector .....	720 00 per annum	720 00
Fumigator .....	720 00 per annum	720 00
†Stenographer .....	600 00 per annum	345 00
Sanitary Inspector, 1st District ....	900 00 per annum	900 00
Sanitary Inspector, 2nd District ....	900 00 per annum	900 00
Sanitary Inspector, 3rd District ....	900 00 per annum	900 00
*Sanitary Inspector, 4th District ....	900 00 per annum	885 50
Physician to the Poor, 1st District .	900 00 per annum	900 00
Physician to the Poor, 2nd District .	900 00 per annum	900 00
Physician to the Poor, 3rd District ..	900 00 per annum	900 00
Physician to the Poor, 4th District ..	900 00 per annum	900 00

Total disbursements for pay roll ..... \$17,495 50

*Expense:*

Addressograph .....	\$ 88 68
Advertising .....	2 10
Badges .....	38 87
Binding and ruling .....	38 73
Board for horse .....	218 62
Books on sanitation, etc. ....	36 71
Directory .....	5 00
Drayage, express and freight .....	73 26
Electricity (light and power) .....	4 56
Electrotypes .....	4 77
Expenses of Food Inspector attending Pure Food Convention at Jamestown, Va. ....	10 00
Expenses of Medical Inspector attending meeting of American Public Health Association at Atlantic City .....	44 50
Furniture .....	174 14
Horse .....	200 00
Horse blanket .....	5 00
Laboratory supplies (bottles, culture blanks, chemicals, drugs, meat, etc.) .....	177 56
Paint, brushes, oil and cans .....	4 60

\*Difference due to loss of time in changing employees.

†From June 3, 1907.

Photo supplies .....	4 80
Postage .....	322 00
Printing .....	339 99
Record cards and transfer files .....	33 70
Repairs to buggy and harness and shoeing horse .....	12 15
Rubber stamps, maps and map tacks .....	34 85
Stationery .....	144 95
Stenographic work .....	153 00
Typewriter and neostyle supplies .....	21 80
Tape lines .....	3 00
Towel and soap supply .....	11 50
Telephone .....	108 00
Wood alcohol and peppermint .....	16 20

Total disbursements for Expense Account .....	\$2,333 04
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*Sanitary Improvement of Milk Supply:*

Apparatus for milk laboratory .....	\$390 41
Bacteriological examinations of milk .....	400 00
Blanket for horse .....	4 00
Boarding horse .....	20 73
Buggy for Dairy Inspector .....	90 00
Chemicals for milk laboratory .....	11 56
Drayage and freight .....	5 05
Electric power .....	3 26
Furniture for milk laboratory .....	65 75
Help in milk laboratory .....	99 50
Horse hire for Dairy Inspector .....	37 00
Medicine for horse .....	1 75
Milk pails .....	7 40
Repairs to buggy and shoeing horse .....	6 10
Services of Dairy Inspector .....	600 00
Travelling expenses of Dairy Inspector .....	64 99
Veterinary fees .....	7 50

Total disbursements for Sanitary Improvement of Milk .....	\$1,815 00
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*Special Vaccination:*

Antitoxin .....	\$ 271 92
Buckets, cans and fumigating paper .....	36 19
Coal for smallpox hospital .....	30 00
Dr. Curd, attendance at smallpox hospital .....	1,204 03
Dr. W. J. West, diagnostic services .....	523 00
Drugs for smallpox hospital .....	6 31
Food supplies for smallpox hospital .....	411 46
Formaldehyde .....	342 30
Freight .....	41
Guard and help at, and transportation to, smallpox hospital ..	951 37
Harness, repairs to harness and wagon, and shoeing horse . . .	60 60
Permanganate of potash .....	182 54

Phone at smallpox hospital . . . . .	96 00
Toll . . . . .	17 77
Utensils for smallpox hospital . . . . .	6 10
Vaccinators . . . . .	236 27
Vaccine virus . . . . .	167 70
Wagon ambulance . . . . .	215 00

Total disbursements for Special Vaccination . . . . .	\$4,758 97
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*Tuberculosis Campaign:*

Carpenters' work at dispensaries . . . . .	\$ 237 80
Drugs for dispensaries . . . . .	34 11
Electric lighting at dispensaries . . . . .	1 96
Electrotypes and rubber stamps . . . . .	1 10
Expenses of Chief Health Officer, inspection of tuberculosis work in Boston, New York and Washington . . . . .	64 45
Fuel for dispensaries . . . . .	14 60
Furniture and fixtures at dispensaries . . . . .	375 17
Installation of electric lights at dispensaries . . . . .	22 00
Instruments at dispensaries . . . . .	10 00
Janitor at dispensaries . . . . .	25 30
Milk for tuberculosis patients . . . . .	5 00
Painting at dispensaries . . . . .	31 15
Printing . . . . .	38 46
Rent of Third street dispensary . . . . .	66 66
Sputum cups and holders . . . . .	14 00
Stationery . . . . .	6 80
Visiting Nurse Association . . . . .	63 60

Total disbursements for Tuberculosis Campaign . . . . .	\$1,012 16
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Total disbursements on all accounts . . . . .	\$27,414 67
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Respectfully submitted,

J. C. BOSHER, *Clerk.*



TABLES  
AND  
SUBSIDIARY REPORTS



TABLE No. 1

MONTHS.	1897.		1898.		1899.		1900.	
	White	Colored	White	Colored	White	Colored	White	Colored
January.....	31	21	27	26	32	26	38	27
February.....	25	16	21	20	31	19	39	18
March.....	27	20	18	19	21	23	19	35
First quarter.....	83	57	66	65	84	68	96	80
April.....	45	33	51	30	46	31	54	28
May.....	23	17	29	18	22	21	25	24
June.....	60	22	45	35	48	28	52	38
Second Quarter.....	128	72	125	83	116	80	131	90
July.....	23	24	26	26	36	29	27	31
August.....	30	22	16	21	23	33	33	19
September.....	30	33	24	24	36	29	43	34
Third Quarter.....	83	79	60	71	95	91	103	84
October.....	41	24	44	25	59	42	54	30
November.....	56	21	50	25	72	40	64	33
December.....	57	56	56	41	56	55	65	48
Fourth quarter.....	154	101	150	91	187	137	183	111
Total.....	448	309	401	310	482	376	513	365
Yearly totals.....	757		711		858		878	

## —MARRIAGES

1901.		1902.		1903.		1904.		1905.		1906.		1907.		
White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	
39	18	46	22	29	24	22	15	41	31	35	24	41	24	
35	29	24	22	45	22	35	32	31	18	41	32	40	27	
24	24	36	28	17	24	25	32	35	18	22	29	35	29	
—	98	71	116	72	91	70	82	79	107	67	98	85	116	80
—	39	65	50	71	47	57	28	56	41	73	46	71	56	
—	26	30	29	23	31	34	18	32	27	20	26	41	32	
—	36	56	40	67	42	65	39	69	38	62	45	76	47	
—	145	101	151	119	161	120	156	85	157	106	155	117	188	135
3 8	36	36	34	36	30	40	30	40	31	36	23	52	39	
—	27	27	32	35	25	30	37	46	42	26	32	36	37	
37	36	52	32	42	44	44	42	49	31	38	39	60	43	
—	109	99	115	98	113	99	114	109	135	104	100	94	148	119
68	35	64	35	60	40	62	38	64	30	56	35	78	53	
40	31	84	45	57	40	58	30	75	39	67	36	91	41	
66	42	74	62	64	45	61	51	69	53	98	65	70	67	
—	174	108	222	142	181	125	181	119	208	122	221	136	239	161
—	526	379	604	431	546	414	533	392	607	399	574	432	691	495
905		1,035		960		925		1,006		1,006		1,186		

TABLE No. 2

*Births Reported During 1907, with Sex and Color.*

MONTH	WHITE		COLORED		TOTAL		GRAND TOTAL
	Male	Female	Male	Female	Male	Female	
January.....	58	59	27	33	85	92	177
February.....	44	43	15	20	59	63	122
March.....	48	42	27	27	75	69	144
April.....	45	42	20	18	65	60	125
May.....	38	39	14	18	52	57	109
June.....	54	50	23	42	77	92	169
July.....	72	60	46	41	118	101	219
August.....	66	55	42	44	108	99	207
September.....	83	75	43	34	126	109	235
October.....	88	75	65	39	153	114	267
November.....	88	82	53	51	141	133	274
December.....	65	62	69	67	134	129	263
Total.....	749	684	444	434	1,193	1,118	2,311

TABLE No. 3

*Attendants at Birth.*

BY WHOM REPORTED	WHITE		COLORED		TOTAL		GRAND TOTAL
	Male	Female	Male	Female	Male	Female	
Physician.....	578	523	145	129	723	652	1,375
Midwife.....	171	161	299	305	470	466	936
Total.....	749	684	444	434	1,193	1,118	2,311

TABLE No. 4  
*Still-Births, by Months.*

MONTH	White	Colored	Total
January.....	6	14	20
February.....	3	7	10
March.....	9	12	21
April.....	9	13	22
May.....	10	13	23
June.....	8	18	26
July.....	9	16	25
August.....	13	17	30
September.....	6	12	18
October.....	3	12	15
November.....	9	19	28
December.....	5	16	21
Total.....	90	169	259

TABLE No. 5  
*Still-Births, by Years, Since 1898.*

YEAR	White	Colored	Total
1898.....	69	136	205
1899.....	81	144	225
1900.....	67	143	210
1901.....	68	142	210
1902.....	87	142	229
1903.....	70	161	231
1904.....	74	147	221
1905.....	59	130	189
1906.....	70	130	200
1907.....	90	169	259

**TABLE No. 6.**  
*Cases Examined by Coroner.*

SEX	White	Colored	Unknown Color	Total
Male.....	55	134	1	190
Female.....	21	99	0	110
Total.....	76	223	1	300

	White	Colored	Unknown Color	Total
Fetuses.....	0	0	1	1
Inquests.....	8	13	0	21

*Still-Births Viewed by Coroner.*

SEX	White	Colored	Unknown Color	Total
Male.....	1	29	0	30
Female.....	2	19	0	21
Total.....	3	48	0	51

TABLE No. 7.

*Deaths for the Year Ending December 31, 1907, Classified by Color and Sex, and Whether Residents or Non-Residents of Richmond.*

SEX	RESIDENTS OF RICHMOND			NON-RESIDENTS OF RICHMOND			TOTAL NUMBER OF DEATHS, INCLUDING NON-RESIDENTS		
	White	Colored	Total	White	Colored	Total	White	Colored	Total
Male.....	637	656	1,293	77	26	103	714	682	1,396
Female.....	531	673	1,204	44	8	52	575	691	1,266
Total.....	1,168	1,329	2,497	121	34	155	1,289	1,363	2,652

TABLE No. 8.

*Giving Death-Rate, with Non-Residents Included and Excluded.\**

COLOR	Population as Determined by Special Census	Actual Number of Deaths		Death-Rate per 1,000	
	1907 Following Annexation	Non-Residents Included	Non-Residents Excluded	Non-Residents Included	Non-Residents Excluded
White.....	71,158	1,289	1,168	18.11	16.42
Colored.....	41,309	1,363	1,329	32.99	32.17
Total.....	112,467	2,652	2,497	23.58	22.21

\*According to the special census taken in July, 1907, following the annexation of considerable new territory in December, 1906, the City of Richmond had the population given in this table. The U. S. Census Bureau does not under any circumstances accept local enumerations. We believe the above figures to be more accurate than any mere estimate made seven years after a census, and they are therefore used throughout this report. (See report of Chief Health Officer, under "Greater Richmond.")

The following table is given, however, of the death-rate according to the U. S. Census Bureau's estimate of population.

TABLE No. 9.

COLOR	Midyear Population 1907 (Official Estimate of U. S. Census Bureau)	DEATH-RATE PER 1,000	
		Non-Residents Included	Non-Residents Excluded
White.....	65,138	19.79	17.93
Colored.....	41,089	33.17	32.34
Total.....	106,227	24.97	23.51

TABLE No. 10.  
*Civil Condition of Decedents.*

CIVIL CONDITION.	WHITE		COLORED		TOTAL
	Male	Female	Male	Female	
Single.....	343	247	374	355	1,319
Married.....	270	145	223	146	784
Widowed.....	96	181	74	179	530
Divorced.....	2	2	5	...	9
Unknown.....	3	...	6	1	10
Total.....	714	575	682	681	2,652

TABLE No. 11.  
*Nativity of Decedents.*

NATIVITY	WHITE		COLORED		TOTAL
	Male	Female	Male	Female	
Virginia.....	567	468	615	633	2,283
Other parts of the United States.....	73	59	48	40	220
Austria.....	1	...	...	...	1
Belgium.....	1	...	...	...	1
Canada.....	2	1	...	...	3
England.....	7	3	1	...	11
Germany.....	30	9	...	...	39
Greece.....	2	1	...	...	3
Holland.....	...	1	...	...	1
Ireland.....	10	21	...	...	31
Italy.....	3	...	...	...	3
Japan.....	...	...	1	...	1
Nova Scotia.....	1	...	...	...	1
Prussia.....	1	...	...	...	1
Russia.....	...	1	...	...	1
Scotland.....	1	4	...	...	5
Sweden.....	2	...	...	...	2
Switzerland.....	...	1	...	...	1
Unknown.....	13	6	17	8	44
Total.....	714	575	682	681	2,652

TABLE No. 12.  
*Deaths by Wards.*

LOCALITY	WHITE		COLORED		TOTAL
	Male	Female	Male	Female	
Marshall Ward.....	104	95	102	113	414
Jefferson Ward.....	109	97	64	63	333
Madison Ward.....	171	96	135	123	525
Monroe Ward.....	54	39	103	90	286
Henry Ward.....	51	40	114	118	323
Clay Ward.....	134	141	44	42	361
Lee Ward.....	54	52	66	83	255
City Home.....	37	15	45	49	146
City Jail.....			2		2
Penitentiary.....			7		7
Total.....	714	575	682	681	2,652

TABLE No. 13.  
*Age of Decedents.*

AGE.	WHITE		COLORED		TOTAL
	Male	Female	Male	Female	
1 day to 30 days.....	39	31	45	22	137
1 month to 6 months.....	40	35	81	65	221
6 months to 1 year.....	26	34	35	38	133
1 year to 2 years.....	22	26	40	36	124
2 years to 5 years.....	34	16	28	38	116
5 years to 10 years.....	13	7	14	12	46
10 years to 20 years.....	28	25	31	56	140
20 years to 30 years.....	75	42	83	93	293
30 years to 40 years.....	60	43	78	74	255
40 years to 50 years.....	50	51	80	76	257
50 years to 60 years.....	78	55	79	74	286
60 years to 70 years.....	110	82	60	61	313
70 years to 80 years.....	106	87	18	21	232
80 years to 90 years.....	27	33	3	9	72
90 years to 100 years.....	4	8	3	3	18
Over one hundred years.....	1				1
Unknown.....	1		4	3	8
Total.....	714	575	682	681	2,652



TABLE No. 14.

*By Whom Certified.*

BY WHOM CERTIFIED.	WHITE		COLORED		TOTAL
	Male	Female	Male	Female	
Physicians.....	667	556	582	611	2,416
Coroner.....	46	17	92	63	218
Board of Health.....	1	2	8	7	18
Total.....	714	575	682	681	2,652

TABLE No. 15.

*Giving Mortality for Each Month of the Year, and the Relative Mortality of Each Month,  
Reduced to a Standard of 100.*

MONTH	WHITE		COLORED		Total	RELATIVE MORTALITY*
	Male	Female	Male	Female		
January.....	62	55	66	69	262	112
February.....	58	47	63	58	226	111
March.....	51	66	69	72	258	114
April.....	62	50	65	48	225	103
May.....	63	43	53	48	207	92
June.....	72	56	62	69	259	119
July.....	77	38	63	78	256	114
August.....	51	38	40	57	186	83
September.....	49	48	48	42	187	86
October.....	54	48	61	52	215	95
November.....	44	32	37	42	155	71
December.....	71	54	55	46	226	100
Total.....	714	575	682	681	2,652	

\*The relative mortality for each month takes into account the number of days in the month.

TABLE No. 16.

Showing the Number of Deaths, Monthly, of the Two Races, from 1897 to 1907, inclusive.

MONTHS	1897.		1898.		1899.		1900.		1901.		1902.		1903.		1904.		1905.		1906.		1907.	
	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored	White	Colored
January.....	59	71	64	58	66	73	65	76	84	93	72	96	81	83	78	73	70	55	78	77	117	135
February.....	64	74	51	60	73	84	65	64	79	96	54	81	69	80	75	77	77	94	71	76	105	121
March.....	68	83	84	102	61	77	83	89	95	103	62	76	84	85	84	113	81	92	83	93	117	141
April.....	48	50	73	100	50	64	98	109	57	96	73	84	87	83	72	79	59	82	76	69	112	113
May.....	42	50	66	103	64	87	89	103	60	80	62	79	82	119	64	82	47	64	78	73	106	101
June.....	80	102	95	94	58	74	92	110	62	88	107	101	83	103	75	114	98	100	97	110	128	131
July.....	62	62	85	116	73	73	75	111	88	92	93	116	71	107	98	106	77	95	87	92	115	141
August.....	56	73	60	62	59	68	79	87	80	102	84	88	63	63	62	66	58	62	70	83	99	97
September.....	51	67	53	60	49	68	74	84	49	71	82	89	64	77	63	76	58	83	71	87	96	90
October.....	67	67	71	59	64	52	68	74	69	62	72	78	64	66	62	63	66	61	79	91	102	113
November.....	51	58	56	52	51	49	70	75	67	62	62	73	48	66	55	64	67	62	73	82	76	79
December.....	52	56	55	68	74	69	76	80	72	76	82	82	88	81	49	65	60	73	111	86	125	101
Total.....	700	813	813	934	741	838	955	1,059	871	1,036	875	1,043	884	1,051	868	1,018	820	897	991	1,017	1,289	1,363
Grand Total....	1,513*	1,747*	1,579*	2,014*	1,907*	1,918*	1,985*	1,876*	2,008†	2,652†												

\*Non-residents not included.

†Non-residents (178 in 1906 and 155 in 1907) included. Eliminating these, as in previous years, the total deaths were 1,830 in 1906 and 2,497 in 1907.

TABLE No. 17.  
Deaths for the Year Ending December 31, 1907, Classified by Causes, Months, Color and Sex.

CAUSES OF DEATH.	MONTHS.												WHITE		COLORED.		Total Deaths 1907		
	Jan.	Feb.	Mch.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Male	Female	Total	Male		Female	Total
I. GENERAL DISEASES.																			
1. Typhoid fever.....	3	2	2	4		4	5	9	8	6	2	2	24	13	37	6	4	10	47
4. Intermittent fever and malarial cachexia .....	1	1	1	2	2	2	5	3	1	3	3		13	2	5	8	10	18	23
6. Measles.....		6	19	5	3	2							11	8	19	6	10	16	26
8. Whooping cough.....				1					1	1			1	2	3			2	3
9. Diphtheria and croup.....							1						1	6	7	2	18	25	32
10. Influenza.....	13	11	9	6	2	1				2	5	2	8	4	12	16	13	31	47
13. Cholera nostras.....				1	1	2					1	4	4				3	3	7
14. Dysentery.....			1	1	3	7	8	5	1	2	1		3	9	12	8	9	17	26
18. Erysipelas.....													2						2
20. Purulent infection and septicemia.....			1		1								1	2	3			2	3
26. Tuberculosis of the larynx.....							17	14	19	21			61	56	117	2	83	143	240
27. Tuberculosis of the lungs.....	21	21	28	25	23	3	1	1	2	2	2	2	7	5	12	1	2	3	15
28. Tuberculosis of the meninges.....	2	1	2	1	1	2							3	1	4	2	6	8	12
29. Abdominal tuberculosis.....	1			1	1	2													
30. Pott's disease.....																			
33. Tuberculosis of other organs.....				2	1	1	2	1	1	1			1	5	6	2	6	8	13
34. General tuberculosis.....	1	1	3	2	1	1	2	1	1	2	1		1	2	6	1	1	2	3
36. Syphilis.....			2						2	1				2	2				
37. Gonorrhea (5 years and over).....				1												1		1	1
39. Cancer and other malignant tumors of the buccal cavity.....																			
40. Cancer and other malignant tumors of the liver and stomach.....	1				1								1	1	1	2		2	3
41. Cancer and other malignant tumors of the peritoneum, intestines, and rectum.....	2	1	2	1	4	3	1	1	3	5			8	10	18	2	5	7	25
42. Cancer and other malignant tumors of the female genital organs.....				4									4	1	5			5	
43. Cancer and other malignant tumors of the breast.....	1		1		1	1	5	1	2	2	1	2		10	10		7	7	17
45. Cancer and other malignant tumors of other organs not specified.....	1	1	2			2	1			1	2			3	3		7	7	10
46. Other tumors (tumors of the female genital organs excepted).....				2	1	1	4	1					8	6	14	5	1	6	20
47. Acute articular rheumatism.....	1													4					4
48. Chronic rheumatism and gout.....	1	1		1									1				1	1	1
49. Scurvy.....																			

TABLE No. 17—CONTINUED.

CAUSES OF DEATH.	MONTHS.												WHITE.		COLORED.		Total Deaths 1907		
	Jan.	Feb.	Mch.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Male	Female	Total	Male		Female	Total
I.—GENERAL DISEASES (Continued).																			
50. Diabetes.....	1		2		3								3	2	5		1	6	
51. Exophthalmic goiter.....			1														2	2	
52. Anemia, chlorosis.....	5		2			1	1	1		1			1	3	4	1	7	8	
53. Acute and chronic alcoholism.....	3		1	1	1	2	1	2	1			2	11	1	12	1	2	14	
54. Chronic lead poisoning.....						1										1		1	
55. Other chronic poisonings.....	1						1	1					1		1		1	2	
II.—DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.																			
60. Encephalitis.....	2	2	1	7	4	7	3	3	3	2	1		17	12	29	2	1	3	
61. Simple meningitis.....	7		1	1				1	1		1		2	1	3	5	6	40	
62. Progressive locomotor ataxia.....																2	1	3	
63. Other diseases of the spinal cord.....																3	1	4	
64. Congestion and hemorrhage of the brain.....	14	17	20	17	11	12	18	7	9	16	11	17	63	30	93	41	35	76	
65. Softening of the brain.....	2	1							1	2	2	7	4	2	6	1	3	4	
66. Paralysis without specified cause.....	4	3	4	1	4	6	4	2	2	5	1	7	13	13	26	6	11	17	
67. General paralysis.....			1						1		1		2	2	4		1	3	
68. Other forms of mental alienation.....	1				3	1	1			1			1	1	3	3	1	5	
69. Epilepsy.....									2		1				1	1	2	3	
70. Convulsions (nonfebrile, 5 years and over).....	3	4	2		1	2	5	2	6	2	2	6	3		3	16	15	31	
71. Convulsions (under 5 years).....	4	1			4	2	2	1	3	1			3	4	7	8	3	11	
72. Tetanus.....													2					2	
73. Other diseases of the nervous system.....	2	1		2						2			2	3	5		2	7	
III.—DISEASES OF THE CIRCULATORY SYSTEM.																			
78. Acute endocarditis.....	1																	3	
79. Organic diseases of the heart.....	27	20	12	17	10	11	12	9	12	16	10	18	58	36	94	39	41	174	
80. Angina pectoris.....	1	1			2	1			1		1		5	2	7			7	
81. Diseases of the arteries, aneurism, etc.....																			
82. Embolism and thrombosis.....	2	4	3	2	1		1	1	4	1	5	1	5	4	9	6	4	10	
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....													3	6	3	9	1	13	
84. Hemorrhages.....																			
85. Hemorrhages.....	1			1		2		1						1	1	1	1	2	
																	2	3	

TABLE No. 17—CONTINUED.

CAUSES OF DEATH.	MONTHS.												WHITE.			COLORED.			Total Deaths 1907
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
IV.—DISEASES OF THE RESPIRA- TORY SYSTEM.																			
88. Diseases of the larynx.		4			1	1	1					2	1	1	2	4	2	6	8
89. Diseases of the thyroid body.					5	4	2					1	2	3	5	16	8	24	29
90. Acute bronchitis.	1	5	6		3	2	4					1	4	7	13	7	12	19	32
91. Chronic bronchitis.	4	6			3	3	4					4	1	6	13	21	16	37	70
92. Broncho-pneumonia.	10	15	7	9	22	11	9	3	10	5	16	31	5	26	44	80	72	147	227
93. Pneumonia.	35	27	29	29	22	11	9	3	10	5	16	31	2	36	44	80	72	147	227
94. Pleurisy.	2	1	1	1	1	4	1	2	1	7		7	5	2	6	7	4	11	13
95. Congestion and apoplexy of the lungs.	4	5	2	6	4	3	9	5	1	7		7	11	9	20	18	15	33	53
96. Asthma.					1					2	1	2	1	1	2	2	4	6	8
97. Pulmonary emphysema.		3	1										2	2	2	2	2	4	4
98. Other diseases of the respiratory system (phtisis excepted).										4	2	1	2	2	4	4	2	6	10
V.—DISEASES OF THE DIGESTIVE SYSTEM.																			
101. Diseases of the pharynx.	1					1								1		2	1	3	3
102. Diseases of the esophagus.						1				1						1		1	1
103. Ulcer of the stomach.			1		2		1			1		1		3	1	4	1	2	6
104. Other diseases of the stomach (cancer ex- cepted).	3		2			1		3	2	1	1	1		3	3	6	1	8	15
105. Diarrhea and enteritis (under 2 years).	4	4	5	3	12	39	44	22	15	10	1	2	44	28	72	47	42	89	161
106. Diarrhea and enteritis (2 years and over).	2	1	4	3	3	6	15	4	8	4	3	3	12	20	32	12	12	24	56
107. Intestinal parasites.														4	3	7	6	3	16
108. Hernia and intestinal obstructions.	2	1	2	1	1	3	2	1	1	2	1		1	1	2	2	2	4	4
109. Other diseases of the intestines.														7	5	12	5	1	17
110. Acute yellow atrophy of the liver.					2									1	2	2	2	2	2
111. Hydatid tumors of the liver.													7	5	12	5	1	5	17
112. Cirrhosis of the liver.	2		1	1	1	1	1		3	2	3	1	2	2	4	4	1	5	10
113. Biliary calculi.					2	1	1						4	1	5	4	1	5	10
114. Other diseases of the liver.	1												2	2	4	1	1	1	4
115. Diseases of the spleen.													1	1	2	1	1	1	4
116. Simple peritonitis (non-puerperal).													3	4	7	3	15	18	25
117. Appendicitis and abscess of the iliac fossa.	3	2		3	2	3	3	3	2	1	2	1	3	4	7	3	15	18	25
118. Appendicitis and abscess of the iliac fossa.	1			1	1	1	4	1	1	2			8	3	11	1	1	2	13
VI.—DISEASES OF THE GENITO-URI- NARY SYSTEM AND ITS ADNEXA.																			
119. Acute nephritis.	1	1	3	1	2	1	3	4	3	4	2	2	4		4	11	12	23	27
120. Bright's disease.	5	15	8	16	10	12	9	5	6	16	10	16	53	26	79	31	18	49	128

TABLE No. 17—CONTINUED.

CAUSES OF DEATH.	MONTHS.												WHITE.		COLORED.		Total	
													Male	Female	Male	Female		
	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.	Dec.						
VI.—DISEASES OF THE GENITO-URINARY SYSTEM AND ITS ADNEXA—Con.																		
121. Other diseases of the kidneys and their adnexa.																		
122. Calculi of the urinary tract.	1	1				1											2	2
123. Diseases of the bladder.	1					1			1		2		4	1			5	2
124. Diseases of the prostate.																		1
125. Diseases of the uterus.	2					1							1				1	2
126. Uterine hemorrhage (non-puerperal).																		1
127. Cysts and other tumors of the ovary.												1					1	1
128. Other diseases of the female genital organs.																	1	1
VII.—THE PUERPERAL STATE.																		
137. Puerperal septicemia.	1		2	1	1	2	2	1	3	2							7	5
138. Puerperal albuminuria and convulsions.			1	1	1	2				1	2	1					6	3
140. Other puerperal accidents—sudden death.	1																1	1
VIII.—DISEASES OF THE SKIN AND CELLULAR TISSUE.																		
142. Gangrene.		1	2	1														
143. Acute abscess, phlegmon.							1										1	1
144. Acute abscess, phlegmon.							1										1	1
145. Other diseases of the skin and its adnexa.																		
IX.—DISEASES OF THE ORGANS OF LOCOMOTION.																		
146. Non-tuberculous diseases of the bones.																		
147. Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted).			2				1										1	2
X.—MALFORMATIONS.																		
150. Congenital malformations (stillbirths excepted).		1																
							1	1	1	1							5	1
XI.—EARLY INFANCY.																		
151. Congenital debility, icterus and sclerema.	10	5	9	6	8	20	12	8	15	16	6	7	26	29	55	38	29	67
152. Other diseases peculiar to early infancy.		1	1										1	1	2	1	1	3

TABLE No. 17—CONCLUDED.

CAUSES OF DEATH	MONTHS.												WHITE.		COLORED.		Total Deaths 1907		
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sep.	Oct.	Nov.	Dec	Male	Female	Total	Male		Female	Total
XII.—OLD AGE.																			
154. Senile debility.....	3	6	3	1	5	4	5	5	.....	7	5	5	15	18	33	8	8	16	40
XIII.—EXTERNAL CAUSES.																			
155. Suicide by poison.....				1				1				1	3		3				3
156. Suicide by asphyxia.....								1				1	1		2				2
158. Suicide by drowning.....								1				3	5		7				1
159. Suicide by firearms.....	2			1	1	1	2	1				3	2		4			2	9
164. Fractures.....				1	2	1	1	1				2	1		4		1	5	9
165. Other accidental traumatisms.....	11	8	3	5	5	1	4	3	4	2	5	6	24	4	28	21	8	29	57
167. Burns and scalds.....	2	4	4	1			2	1	1	1	1	1	4	1	5	3	9	12	17
169. Sunstroke.....							2	1	1			1	2		3	2	2	2	4
172. Accidental drowning.....				3		1	2	2	1		1	1	2		3	5	1	6	9
173. Inanition (starvation).....								2					2		2	1		1	3
174. Absorption of deleterious gases (nonsuicidal).....				1				1				1	2		2			1	3
175. Other acute poisonings.....				1					1			1	1		2			1	3
176. Other external violence.....	1	1	1	2	1	1	1	1		2	3	1	3	1	4	9	2	11	15
XIV.—ILL-DEFINED DISEASES.																			
177. Dropsy.....																			
178. Sudden death.....	1	1	2					1	1	1	1	.....	1	1	2	2	4	6	8
179. Causes of death unspecified or ill-defined.....	7	3	8	5	9	19	9	12	11	9	6	6	23	17	40	36	28	64	104
Total deaths from all causes.....	252	226	258	225	207	259	256	186	187	215	155	226	714	575	1,280	682	1,363	681	2,652

TABLE No. 18.

Deaths for the Year Ending December 31, 1907, Among Non-Residents.\*

CAUSES OF DEATH.													MONTHS.				WHITE.		COLORED.		Total Deaths Non-Res- dents, 1907.		
Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total						
I.—GENERAL DISEASES.																							
1. Typhoid fever.....	2	2	1	1			1		5	1		6	5	11	1	1	2	13					
9. Diphtheria and croup.....							1				1	2		2				2					
10. Influenza.....							1											1					
20. Purulent infection and septicemia.....	1			3								1	2	3	1	1	1	4					
27. Tuberculosis of the lungs.....		1						1	1			1	1	2	1	1	2	4					
28. Tuberculosis of the meninges.....				1											1		1	1					
29. Abdominal tuberculosis.....									1							1	1	1					
39. Cancer and other malignant tumors of the buccal cavity.....				1				1				1	1	2				2					
40. Cancer and other malignant tumors of the stomach and liver.....											1		1	1				1					
45. Cancer and other malignant tumors of other organs or of organs not specified.....				1		2	1		1	1	1	4	2	6	1		1	7					
46. Other tumors (tumors of the female genital organs excepted).....									1	1			2	2				2					
48. Chronic rheumatism and gout.....			1									1		1		1	1	1					
50. Diabetes.....			1									1		1				1					
55. Acute and chronic alcoholism.....						1						1		1				1					
II.—DISEASES OF THE NERVOUS SYSTEM, ETC.																							
61. Simple meningitis.....						1	1	1	1			3	3	6				6					
64. Congestion and hemorrhage of the brain.....			2									2	1	3				3					
66. Paralysis without specified cause.....	1					1		1	1		1	3	1	4				4					
72. Tetanus.....									1						1		1	1					
III.—DISEASES OF THE CIRCULATORY SYSTEM.																							
79. Organic diseases of the heart.....			1	1		1	1			1		3	1	4		1	1	5					
81. Diseases of the arteries, aneurism, etc.....												2		2				2					
82. Embolism and thrombosis.....	1							1			1		1	1				1					
83. Diseases of the veins (varicos, phlebitis, etc.).....						1							1	1				1					
85. Hemorrhages.....			1									1		1				1					
IV.—DISEASES OF THE RESPIRATORY SYSTEM.																							
93. Pneumonia.....												2	3	5				5					
95. Congestion and apoplexy of the lungs.....	1		1	1		1						1	1	1				1					
96. Gangrene of the lungs.....	1		2									2		2				2					



TABLE No. 18—CONCLUDED.

CAUSES OF DEATH.	MONTHS												WHITE.				COLORED.		Total Deaths Non-Resi- dents, 1907.
	Jan.	Feb.	Mch.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Male	Female	Total	Male	Female	Total	
IV.—DISEASES OF THE RESPIRA- TORY SYSTEM—Continued.																			
99. Other diseases of the respiratory system (phthisis excepted).....				1		1		1							1	1	2		3
V.—DISEASES OF THE DIGESTIVE SYSTEM.																			
101. Diseases of the pharynx.....						1							1		1				1
103. Ulcer of the stomach.....				1									1		1				1
106. Diarrhea and enteritis (2 years and over).....						1							1		1				1
108. Hernia and intestinal obstructions.....	1						1			1			2		3		1		4
113. Biliary calculi.....				1					2				2		3				3
114. Other diseases of the liver.....						1					1		1		1		1		2
116. Simple peritonitis (non-puerperal).....				1	1			1				1	1		2		1		3
118. Appendicitis and abscess of the iliac fossa.....	1						4	1		1			6		7		1		8
VI.—DISEASES OF THE GENITO-URI- NARY SYSTEM AND ITS ADNEXA.																			
120. Bright's disease.....			1	1	1	2		2			4	2	6	5	11	2			13
121. Other diseases of the kidney, etc.....	1											1		1	1				2
123. Diseases of the bladder.....																2			2
VII.—THE PUERPERAL STATE.																			
138. Puerperal albuminuria and convulsions.....				1										1	1				1
VIII.—DISEASES OF THE SKIN, ETC.																			
142. Gangrene.....				1								1	1		1	1			2
XIII.—EXTERNAL CAUSES.																			
158. Suicide by drowning.....								1						1	1				1
159. Suicide by firearms.....				1							1		2	3	1	4	3		2
164. Fractures.....						1	1	1		2	1			4	4	2	2		6
166. Other accidental traumas.....	1			2	2			1						1	1	1	1		4
167. Burns and scalds.....							1						1	1	1				1
169. Sunstroke.....																			
172. Accidental drowning.....																			
173. Inanition (starvation).....																			
176. Other external violence.....	2	2	1			1					3		4		4	5			9
XIV.—ILL-DEFINED DISEASES.																			
179. Causes of death unspecified or ill-defined.....	1		1		2							1	3	2	5				5
Total deaths of non-residents from all causes.....	15	11	18	13	6	13	16	14	14	11	14	10	77	44	121	26	8	34	155

\*These deaths are included in TABLE No. 17. The deaths among residents can therefore be obtained by deducting those in this TABLE from those given in TABLE No. 17.

TABLE No. 19.

*Giving Death-Rate and Per Cent. of Deaths from Different Causes.*

CAUSE OF DEATH	ACTUAL NUMBER OF DEATHS			DEATH-RATE PER 1,000 LIVING			PER CENT. OF TOTAL MORTALITY		
	White	Colored	Total	White	Colored	Total	White	Colored	Total
I. General Diseases.....	335	318	653	4.71	7.69	5.81	25.99	23.33	24.62
II. Diseases of the Nervous System and Organs of Special Sense...	184	166	350	2.58	4.02	3.11	14.28	12.18	13.20
III. Diseases of the Circulatory Sys- tem.....	120	101	221	1.69	2.45	1.97	9.31	7.41	8.33
IV. Diseases of the Respiratory Sys- tem.....	169	286	455	2.38	6.92	4.05	13.11	20.98	17.16
V. Diseases of the Digestive System	165	171	336	2.32	4.14	2.99	12.80	12.55	12.67
VI. Diseases of the Genito-Urinary System and its Adnexa.....	94	77	171	1.32	1.87	1.52	7.29	5.65	6.45
VII. The Puerperal State.....	13	9	22	.18	.22	.19	1.01	.66	.83
VIII. Diseases of the Skin and Cellular Tissue.....	4	8	12	.06	.19	.10	.31	.59	.45
IX. Diseases of the Organs of Loco- motion.....	1	3	4	.01	.07	.04	.07	.22	.15
X. Malformations.....	5	1	6	.07	.02	.05	.39	.07	.23
XI. Early Infancy.....	57	68	125	.80	1.65	1.11	4.42	4.99	4.71
XII. Old Age.....	33	16	49	.46	.39	.44	2.56	1.17	1.85
XIII. External Causes.....	65	69	134	.91	1.67	1.19	5.04	5.06	5.05
XIV. Ill-Defined Diseases.....	44	70	114	.62	1.69	1.01	3.42	5.14	4.30
Total Deaths from All Causes.....	1,289	1,363	2,652	18.11	32.99	23.58	100.00	100.00	100.00

TABLE No. 20.

*Giving Death-Rate and Per Cent. of Deaths at Different Age Periods.*

AGE PERIOD	ACTUAL NUM- BER OF DEATHS			DEATH-RATE PER 1,000 LIVING			PER CENT. OF TOTAL MORTALITY		
	White	Colored	Total	White	Colored	Total	White	Colored	Total
Under 1 year.....	205	286	491	2.88	6.92	4.37	15.91	20.98	18.52
1 year to 5 years.....	98	142	240	1.38	3.44	2.13	7.60	10.42	9.05
5 years to 10 years.....	20	26	46	.28	.63	.41	1.55	1.91	1.73
10 years to 20 years.....	53	87	140	.74	2.11	1.25	4.11	6.38	5.28
20 years to 30 years.....	117	176	293	1.64	4.26	2.60	9.08	12.92	11.05
30 years to 40 years.....	103	152	255	1.45	3.68	2.27	7.99	11.15	9.61
40 years to 50 years.....	101	156	257	1.42	3.77	2.29	7.84	11.45	9.69
50 years to 60 years.....	133	153	286	1.87	3.70	2.54	10.31	11.23	10.80
60 years to 70 years.....	192	121	313	2.70	2.93	2.78	14.89	8.87	11.90
70 years to 80 years.....	193	39	232	2.71	.94	2.06	14.97	2.86	8.75
80 years to 90 years.....	60	12	72	.85	.29	.64	4.66	.88	2.71
90 years to 100 years.....	12	6	18	.17	.15	.16	.93	.44	.67
Over 100 years.....	1	1	2	.01	.00	.01	.08	.00	.04
Age unknown.....	1	7	8	.01	.17	.07	.08	.51	.30
Total Deaths at All Ages.....	1,289	1,363	2,652	18.11	32.99	23.58	100.00	100.00	100.00

TABLE No. 21.

*Showing the Number of Non-Residents Buried Here and Their Color.*

	White	Colored	Total
Non-Residents .....	263	182	445

*Showing the Number of Persons Who Died Here and Were Buried Elsewhere and Their Color.*

	White	Colored	Total
Transit permits granted .....	180	107	287

TABLE No. 22.

*Showing Number of Cases of Typhoid Fever Reported to the Health Department, and the Number of Deaths for Each Month of 1907.*

MONTH	Cases on hand at beginning of month	CASES REPORTED IN MONTH			Total under treatment	DEATHS IN MONTH			Recoveries in month	Total discharges	Cases on hand end of month
		White	Colored	Total		White	Colored	Total			
January .....	17	18	5	23	40	2	1	3	14	17	23
February .....	23	16	6	22	45	1	1	2	4	6	39
March .....	39	3	1	4	43	2	2	4	31	33	10
April .....	10	18	1	20	30	2	2	4	2	6	24
May .....	24	15	1	15	39	2	2	4	10	10	29
June .....	29	19	6	25	54	4	3	7	25	29	25
July .....	25	55	26	81	106	2	3	5	17	22	84
August .....	84	89	23	112	196	7	2	9	69	78	118
September .....	118	66	14	80	198	8	2	10	100	108	90
October .....	90	54	11	65	155	5	1	6	79	85	70
November .....	70	21	4	25	95	2	2	4	50	52	43
December .....	43	20	3	23	66	2	2	4	29	31	35
Summary for year	17*	395	100	495	512	37	10	47	430	477	35†

\*On hand at beginning of year.

†On hand at close of year.

TABLE No. 23.

*Showing the Number of Cases of Diphtheria, Scarlet Fever and Measles Reported to the Health Department, and the Number of Deaths for Each Month of 1907.*

MONTH	DIPHTHERIA						SCARLET FEVER						MEASLES					
	Cases			Deaths			Cases			Deaths			Cases			Deaths		
	W.	C.	T.	W.	C.	T.	W.	C.	T.	W.	C.	T.	W.	C.	T.	W.	C.	T.
January...	18	...	18	...	...	...	2	...	2	...	...	...	77	22	99	...	...	...
February...	10	...	10	1	...	1	2	...	2	...	...	...	348	71	419	5	1	6
March.....	8	3	11	2	1	3	6	...	6	...	...	...	450	101	551	8	11	19
April.....	4	...	4	...	...	...	2	...	2	...	...	...	83	37	120	3	2	5
May.....	3	1	4	1	...	1	...	...	...	...	...	...	10	8	18	2	1	3
June.....	2	...	2	...	...	...	3	...	3	...	...	...	4	1	5	1	1	2
July.....	3	...	3	1	...	1	1	...	1	...	...	...	...	2	2	...	...	...
August.....	14	2	16	...	...	...	3	...	3	...	...	...	...	...	...	...	...	...
September...	9	...	9	1	...	1	3	1	4	...	...	...	1	...	1	...	...	...
October.....	24	3	27	1	1	2	7	...	7	...	...	...	1	...	...	...	...	...
November...	25	1	26	5	...	5	9	...	9	...	...	...	2	...	2	...	...	...
December...	30	2	32	2	...	2	8	...	8	...	...	...	7	1	8	...	...	...
Total..	150	12	162	14	2	16	46	1	47	...	...	...	983	243	1,226	19	16	35

TABLE NO. 24.

*Showing the Number of Reported Cases and the Number of Deaths from Typhoid Fever, Diphtheria and Scarlet Fever each year since 1897, and the death-rate per annum.*

YEAR	ESTI- MATED POPULA- TION†	TYPHOID FEVER			DIPHTHERIA			SCARLET FEVER		
		Cases	Deaths*	Death- Rate per 100,000*	Cases	Deaths*	Death- Rate per 100,000*	Cases	Deaths*	Death- Rate per 100,000*
1897	83,950	82	37	44.1	54	9	10.7	75	1	1.2
1898	84,316	112	42	49.8	35	5	5.9	43	2	2.4
1899	84,682	136	49	57.9	19	3	3.5	37	2	2.4
1900	85,050	282	88	103.5	33	7	8.2	35	3	3.5
1901	86,307	174	49	56.8	59	10	11.7	33		
1902	87,565	259	63	72.0	224	37	42.3	32	2	2.3
1903	88,822	162	64	72.0	213	44	49.5	54	3	3.4
1904	90,079	171	39	43.3	78	8	8.9	92	1	1.1
1905	91,337	164	40	43.8	184	12	13.1	33	1	1.1
1906	92,594	288	41	44.3	171	10	10.8	36	3	3.2
1907	112,467	495	47	41.8	162	16	14.2	47		

\*The annual reports of the Health Department prior to reorganization in July, 1906, did not include deaths among non-residents. In the abovetable, deaths from Diphtheria and Scarlet Fever are from the annual reports and therefore do not include non-residents except for 1906 and 1907; deaths from Typhoid Fever were gotten from the original death certificates, and include non-residents for entire period. All figures with non-residents included are in black face type.

†Populations 1897-1900, inclusive, are those of the U. S. Census Bureau (census in decennial years and estimates in intervening years); population for 1907 is that ascertained by special local census, (July, 1907), following annexation of new territory on December 8, 1906; for 1901-1906, inclusive, estimates are calculated from this special census and the United States Census of 1900.

TABLE NO. 25.

*Meteorological Observations, 1907.\**

MONTHS	THERMOMETER			Rainfall in Inches
	Highest Degree	Lowest Degree	Mean Degree	
January.....	78	14	43	1.22
February.....	65	12	35	2.30
March.....	94	26	52	2.91
April.....	84	25	50	4.81
May.....	89	42	63	5.78
June.....	92	49	68	6.21
July.....	96	61	79	2.99
August.....	93	58	75	5.31
September.....	92	47	73	6.51
October.....	48	34	56	2.30
November.....	67	30	48	4.64
December.....	68	24	42	3.44
Total for year.....				48.42

\*From reports of U. S. Weather Bureau.

## REPORT OF MEDICAL INSPECTOR FOR 1907.

January 1, 1908.

DR. E. C. LEVY,

*Chief Health Officer, Richmond, Va.:*

SIR: The office of Medical Inspector was created by an ordinance approved May 20, 1907, and the present incumbent qualified on June 3, 1907.

The duties of the office were prescribed by the ordinance, as follows: "A medical inspector, who shall be a physician or skilled sanitarian, who shall devote his entire time to the duties of his office, and who shall, under the Chief Health Officer, investigate all cases of contagious or infectious diseases with a view of locating their origin and preventing the spread of contagion, and who shall have special charge of the enforcement of quarantine regulations, and discharge such other duties as the Board of Health may prescribe."

Under the direction of the Chief Health Officer the following visits and inspections were made for the causes given.

	Typhoid Fever	Diph- theria	Scarlet Fever	Chicken Pox	Fatal Infantile Diarrhea	Other Causes	Total
June.....	40						40
July.....	78			5	40	27	150
August.....	112				21	1	134
September.....	76				30		116
October.....	73	16	12	2			103
November.....	33	94	22	3		4	156
December.....	21	106	24	11		5	167
Totals.....	433	216	62	27	91	37	866

Antitoxin was given at request of physicians in 21 cases. Cultures taken:—for diagnosis 13; for release 112; total 125.

*Typhoid Fever.*—During the year 495 cases of typhoid fever were reported to the Department; 395 being of white and 100 of colored persons. Of these cases, 47 (37 white and 10 colored) died, and 35 were still under treatment at the end of the year. The fatality for all reported cases was 9.5 per cent; for the white cases it was 9.4 per cent, and for the colored cases 10.0 per cent. The above case fatality and the results of the investigation show that practically all cases occurring in the city are reported by the attending physician.

Of the reported cases, approximately 25 per cent. were apparently contracted outside the city, a large number of these cases being brought to Richmond from other places in Virginia for treatment.

Of the decedents, 34 were residents of Richmond, and 13 non-residents. The annual death rate from typhoid, including all cases, was 41.8 per 100,000. Excluding non-residents the rate was 30.2 per 100,000.

Every case of typhoid reported since May 1, 1907, was personally investigated as to the source of the infection. This study will be continued during the coming year, and the results of the investigation reported in a subsequent communication.

At each house instruction was given the family as to the precautions to be observed to prevent the spread of the disease.

*Diphtheria*.—During the year 162 cases of diphtheria were reported, of which 16 terminated fatally. In the early months of the year the disease was of a mild type, but in the late fall the number of reported cases increased markedly, and the disease assumed a much more severe character. To meet this situation, the Board of Health at the end of October adopted a regulation requiring two successive negative cultures for the release from quarantine, the last one at least to be taken by the Medical Inspector. At the same time, the free distribution of antitoxin, which had been confined to the pauper cases, was extended to all those cases in which its purchase would be a hardship on the family. The effect of these two measures was satisfactory, many of the severe laryngeal cases recovering under the large doses of antitoxin, and the number of cases not increasing.

The prevalence of the laryngeal type of the disease offers an additional reason for the establishment of a municipal hospital for contagious diseases to which these cases could be carried for prompt intubation and the careful nursing and attention subsequently necessary.

*Scarlet Fever*.—Although 47 cases of scarlet fever were reported, the year passed without a death from this cause. The disease was of a mild type, so mild as to make the diagnosis difficult, and the maintenance of proper isolation still more so. Owing to the fact that many cases reported recovered within ten days, or even a week of the onset, a regulation was put into effect requiring all cases in which recovery was reported within four weeks of the original report of the case to be seen by the Medical Inspector and examined as to peeling and cessation of discharges from the nose and ears. As a result, practically all cases were held in quarantine for an additional period varying from a few days to four weeks, until the danger of contagion was considered as past. Most physicians have adopted the policy of turning the cases over to the Department as soon as recovery is complete. This insures proper control of the cases, and, at the same time, relieves the physician of the burden of the quarantine.

In scarlet fever, as in other contagious diseases, there are many cases in which the family cannot or will not isolate the patient properly at home. The successful control of these diseases calls for an isolation hospital to which this class of cases could be removed at once and quarantined until recovery is complete and danger of contagion past.

*Measles*.—Beginning early in January the city was swept by an epidemic of measles, 1,189 cases being reported in the first four months of the year. The epidemic reached its height on February 25th, on which day 42 cases were reported, and subsided rapidly, though some cases continued to be reported until June 1st. During the year a total of 1,226 cases was reported, with 35 deaths, a mortality of 2.9 per cent. The year closed with 2 cases under treatment.

*Chicken-pox*.—Owing to the prevalence of a mild type of small-pox, causing confusion in diagnosis, all cases of chicken-pox, except those previously seen by the Diagnostician of the Health Department were inspected. By this means 2 cases of small-pox were discovered and sent to the hospital.

The efficiency of the work in connection with contagious diseases has been much increased by the cordial cooperation and good will of the practising physicians of the city. They have freely availed themselves of the assistance afforded them by the Department, and have in turn assisted enthusiastically and intelligently in its work.

Respectfully submitted,

A. W. FREEMAN, M. D.,

*Medical Inspector.*

## REPORT OF REGISTRAR OF VITAL STATISTICS.

DR. E. C. LEVY,

*Chief Health Officer, Richmond, Va.*

DEAR SIR: I herewith submit my first annual report as Registrar of Vital Statistics, an office created by city ordinance May 20, 1907, and to which I had the honor of being elected June 3d.

There were 2,311 births reported during the year 1907 as against 1,133 reported in 1906, an increase of 1,178, or 104 per cent. The large gain in the number of births reported is partly owing to the extension of the corporate limits of the city in December, 1906, by which there were added to the population of the city 18,615 inhabitants, and partly to measures taken to ascertain some of the sources of delinquency, whereby a very large number of births was discovered and added to the record.

Prior to 1907 the ordinance requiring midwives and accoucheurs to register at the office of the Health Department was to a great extent unobserved. As a result of active efforts made during the year to enforce this ordinance there are now registered 91 midwives and accoucheurs, 28 white and 63 colored, and it is confidently believed that the remaining few who have thus far escaped the notice of this Department will soon be added to the register.

It is apparent that many of the midwives now registered are, through ignorance or the infirmities of age, unfit to be engaged in the occupation, and are incapable of fulfilling the requirements of the city ordinance concerning the registration of births. It therefore seems most desirable that some measures be taken to regulate the practice of midwifery in this city.

Respectfully submitted,

JNO. M. DONAHOE,

*Registrar of Vital Statistics.*



## REPORT OF CITY BACTERIOLOGIST.

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*Richmond, Va., January 1, 1908.*

DR. E. C. LEVY,

*Chief Health Officer, Richmond, Va.*

SIR: I have the honor to report the work of the City Bacteriologist for the year 1907.

Since the establishment of this office by the City Council in November, 1905, the work has greatly increased. During the past year 80 per cent. of the practising physicians in the city have used the laboratory to an extent varying from 1 to 100 specimens each.

Doctor E. Guy Hopkins, who succeeded Doctor E. C. Levy as City Bacteriologist, finding that it would not be possible for him to continue to occupy the office in connection with his other work, sent in his resignation, which was accepted on August 15th. Pending the election of a permanent City Bacteriologist, the position was filled for four weeks by Doctor Allen W. Freeman, Medical Inspector of the Health Department, and then for five weeks by Doctor H. B. Spencer, who was appointed *pro tempore*. This position he filled with satisfaction from September 9th to October 14th. On October 14th Doctor Karl S. Blackwell was elected to fill the position permanently.

During the last part of October diphtheria became unusually prevalent throughout the city, and, in view of this fact, the Board of Health adopted a policy of requiring two consecutive negative release cultures before the quarantine be removed, the final release culture to be taken by the Medical Inspector. By this regulation the cases were as a rule released earlier than they would have been if the usual time limit of three weeks from the beginning of illness had been adopted for quarantine after diphtheria. In the cases we have had, the average length of time from the date of the first symptoms until the final release culture was made has been fifteen days. During the past year there have been examined 600 diphtheria swabs, 332 of which were for diagnosis and 268 for release. Of the 332 for diagnosis 146 were positive.

The number of examinations for typhoid fever made during the year was 939. Of these 685 were Widal tests and 254 were diazo tests.

The number of specimens examined for tubercle bacilli was 840.

The total number of examinations of all kinds made during the year was 2,379.

A summary of the year's work is given in the following table:

*Bacteriological Laboratory—Summary of Work for 1907.*

MONTH	DIPHTHERIA					TYPHOID FEVER					TUBERCULO-SIS.				
	Object of Examination	RESULT OF EXAMINATION				Test	RESULT OF EXAMINATION.			RESULT		Total			
		Positive	Negative	Atypical	Specimen unsatisfactory		Total	Positive	Negative	Atypical	Total				
1907.	Diagnosis	21	20	3	.....	78	Widal.	12	13	4	46	24	52	76	200
	Release	16	15	2	1		Diazo.	10	7	.....					
	Diagnosis.	9	16	.....	.....	44	Widal.	9	8	11	39	17	55	72	156
	Release.	7	9	3	.....		Diazo.	7	4	.....					
March.	Diagnosis.	5	20	1	.....	27	Widal.	6	12	6	34	40	64	104	165
	Release.	1	.....	.....	.....		Diazo.	5	5	.....					
	Diagnosis.	1	3	1	.....	13	Widal.	7	21	11	57	22	71	93	163
	Release.	5	2	1	.....		Diazo.	11	5	2					
May.	Diagnosis.	3	5	2	4	24	Widal.	6	23	10	58	23	48	71	153
	Release.	2	5	2	1		Diazo.	7	8	4					
	Diagnosis.	2	9	.....	.....	14	Widal.	8	27	16	69	11	47	58	141
	Release.	.....	3	.....	.....		Diazo.	13	3	2					
July.	Diagnosis..	4	3	.....	.....	8	Widal.	26	74	14	156	11	45	56	220
	Release.	1	.....	.....	.....		Diazo.	17	19	6					
	Diagnosis.	11	12	1	1	36	Widal.	42	54	19	159	19	38	57	252
	Release.	6	5	.....	.....		Diazo.	20	12	12					

*Bacteriological Laboratory—Summary of Work for 1907—Continued.*

MONTH	Object of Examination	DIPHTHERIA					TYPHOID FEVER					TUBERCULOSIS			Total Examinations	
		RESULT OF EXAMINATION					Test	RESULT OF EXAMINATION			RESULT		Total			
		Positive	Negative	Atypical	Specimen unsatisfactory	Total		Positive	Negative	Atypical	Positive	Negative				
1907	September.....	Diagnosis.....	7	9	1	.....	3	Widal.....	22	49	11	112	18	35	53	198
		Release.....	8	8	.....	.....	.....	Diazo.....	6	18	6	.....	.....	.....	.....	
	October.....	Diagnosis.....	18	19	1	.....	54	Widal.....	24	50	9	102	13	33	46	202
		Release.....	5	10	1	.....	.....	Diazo.....	7	9	3	.....	.....	.....	.....	
	November.....	Diagnosis.....	17	23	2	.....	99	Widal.....	12	36	5	70	24	40	64	233
		Release.....	20	37	.....	.....	.....	Diazo.....	8	8	1	.....	.....	.....	.....	
	December.....	Diagnosis.....	16	57	5	.....	170	Widal.....	7	17	4	37	18	72	90	297
		Release.....	11	81	.....	.....	.....	Diazo.....	6	3	.....	.....	.....	.....	.....	
Total for 1907..	For Diagnosis. For Release.	.....	.....	.....	.....	332	Widal tests.	.....	.....	.....	685	.....	.....	.....	2,379	
		.....	.....	.....	.....	268	Diazo tests.	.....	.....	.....	254	.....	.....	.....		
	Total.....	.....	.....	.....	.....	600	Total.....	.....	.....	.....	939	.....	840	.....		

Respectfully submitted,  
 K. S. BLACKWELL, M. D.,  
*City Bacteriologist.*

## REPORT OF INSPECTOR OF PLUMBING.

Dr. E. C. LEVY,  
*Chief Health Officer, Richmond, Va.*

SIR: I have the honor to submit to you my annual report for the year ending December 31, 1907. The duties of the office of Inspector of Plumbing have greatly increased, and as each year advances the position shows a steady growth in the work of general sanitary improvement. The past year shows a large increase in the number of new buildings inspected over that of any previous year.

The number of inspections made of plumbing additions and alterations and other sanitary improvements far exceeds that of any former year. There have also been numerous complaints requiring investigation in the annexed territory, relative to the abatement of nuisances caused by cesspools and lack of drainage, requiring much of my time. When the construction of sewers is fully under way in the annexed territory there will be a still further demand made upon the office, thereby showing the great necessity of an Assistant Inspector of Plumbing, so as to give the work the proper attention it ought to have.

Much could be said in detail as to the large amount of routine work of the office, which alone consumes a great deal of my time, but I fully realize the fact that you are perfectly familiar with all the duties involved, therefore I deem it unnecessary to make any further mention of the same in this report.

A large quantity of old defective plumbing and drainage was condemned and ordered torn out during the past year, and many new fixtures installed. The agents and owners of property have complied favorably with the plumbing laws, by having the work ordered by this Department done promptly, with but few exceptions, and most cases where delays have occurred have been caused by the plumber not having a sufficient number of men to handle the work.

I desire again to call your attention to the very important matter of the urgent need of sewer extensions which should be made in some of our streets and alleys where there are now no sewers available to make the proper connections. There are many complaints from such localities of nuisances existing on premises caused from old defective private sewers and joint connections, and the conditions cannot be permanently relieved until public sewers are installed. These old sewers are generally found in a deplorable condition, running across property lines and under buildings, and connected to sewers in side streets and alleys. The public sewer extensions asked for to relieve these conditions should be granted at once, as I know of no character of public improvement that should receive more immediate action for the protection of the public health than the abatement of these nuisances, and I trust during the present year that by prompt action of the City Council more of the old private sewers will be abandoned and the necessary extensions asked for by the Health Department granted.

*Below will be found a tabulated report of the work done during the year 1907.*

MONTH	Inspections Made	Plumber's Permits Issued	New Houses Inspected	Additions and Alterations	Complaints Investigated	Notices served on Agents and Owners	Police Court Cases
January.....	95	114	20	63	12	12	.....
February.....	96	54	8	62	26	12	.....
March.....	131	98	28	68	35	35	1
April.....	160	101	22	115	23	23	.....
May.....	150	140	40	87	23	23	1
June.....	148	61	32	89	27	27	7
July.....	174	173	41	103	30	30	8
August.....	159	122	61	76	22	22	2
September.....	128	125	37	69	22	19	.....
October.....	159	119	37	94	28	28	7
November.....	189	106	28	135	28	28	5
December.....	181	87	23	138	20	20	5
Total.....	1,770	1,300	375	1,099	296	279	36

Fines collected.....\$20.00

Respectfully submitted,

THOS. M. LANDERS,  
*Inspector of Plumbing.*

# REPORT OF INSPECTION OF MILK AND FOOD SUPPLIES.

Dr. E. C. LEVY,

*Chief Health Officer, Richmond, Va.*

DEAR SIR: I most respectfully submit to you my annual report of work done in the Milk and Food Department for the year ending December 31, 1907.

## INSPECTIONS.

Stores.....	5,878
Bakeries.....	130
Dairies.....	490
Markets.....	520
Depots.....	64
Total.....	7,082

## FOOD CONDEMNED.

	<i>Pounds.</i>	<i>Est. Value.</i>
Assorted meats.....	15,559	\$ 1,123 90
Assorted game.....	11,217	1,268 07
Poultry.....	1,032	148 93
Assorted vegetables.....	74,613	1,184 00
Fresh fish.....	25,668	796 65
Cheese.....	451	45 90
Butter.....	162	40 50
Fruits.....	14,723	899 00
Eggs(380 dozen).....	355	82 00
Oysters (52 gallons).....	500	52 00
Oysters (7 bbls.).....	200	25 00
Watermelons.....	2,500	150 00
Preserves (26 buckets).....	780	46 80
Crackers (1 bbl.).....	50	2 00
Canned goods (16 cases).....	800	40 00
Pickels (7 cases).....	350	15 00
Cakes (10 cases).....	550	18 50
Shelled nuts.....	565	67 50
Total.....	150,075	\$6,005 75

Samples of milk taken to chemist.....	1,388
Lots of milk examined (236,000 gallons).....	2,258
Permits applied for.....	208
Permits granted.....	201
Permits refused.....	7

Fees paid to Auditor .....	\$404 00
Permits suspended and restored .....	21
Permits revoked .....	23
Permits revoked and restored .....	5
Cases tried in Police Court .....	3—Selling unsound meat.
Cases tried in Police Court .....	1—Selling unsound fish.
Cases tried in Police Court .....	3—Selling milk while permit was suspended.
Amount of fines paid .....	\$70 00
Milk and cream destroyed .....	30 gallons
Milk returned to owner .....	167 gallons

The work of this Department for the past year has been very satisfactory. Condemnations have been less than last year. This I attribute to merchants shipping goods here recognizing the fact that any unsound or unwholesome goods caught will be condemned and destroyed.

For years Richmond was a dumping ground for certain goods which could not be sold in other cities, but our law has changed this, and it is seldom now that we find any such goods.

On May 1st, Mr. R. H. Curtis, Assistant Food Inspector, was promoted to the position of Dairy Inspector, and he has done good work. Decided improvements have been made in the sanitary condition of the dairies, and there still remains a great deal to be done before we can be abreast with other cities in regard to good sanitary milk.

Mr. E. M. Noble was appointed in place of Mr. Curtis as Assistant Food Inspector, and he has performed his duties in a very efficient manner, with honor to himself and credit to the Department.

Respectfully submitted,

WM. T. HOLDSWORTH,

*Milk and Food Inspector.*

## REPORT OF CHEMIST.

Dr. E. C. LEVY,  
*Chief Health Officer.*

SIR: During the year 1907 I have made chemical examinations of fourteen hundred and forty (1,440) samples. These samples were as follows:

Beef.....	1
Canned corn.....	1
Cream.....	5
Drugs.....	2
Ice cream.....	1
Pudding.....	1
Milk.....	1,388
Condensed milk.....	11
Well water.....	30
<b>Total.....</b>	<b>1,440</b>

While most of these samples have been collected by officers of the Health Department, the two samples of drugs, the pudding and the beef were examined at the request of the Police Department.

Several samples of well water were analyzed for the School Board, the samples being taken from wells from which the supply of drinking water for the pupils is drawn.

The following table shows the monthly average of fats, solids not fat and total solids of the milk samples during the year. The averages at the bottom of the table were obtained by dividing the sum of the monthly averages by twelve.

*Number of Samples of Milk Examined and the Averages of Milk Solids During the Year 1907, by Months.*

MONTH	No. Samples Examined	No. below Standard	Per cent. of Samples below Standard.	AVERAGES OF MILK SOLIDS		
				Fats	Solids not Fats	Total Solids
January.....	121	17	14.0	3.61	9.21	12.82
February.....	130	22	16.9	3.59	9.30	12.89
March.....	121	12	9.9	3.22	9.41	12.63
April.....	116	17	14.6	3.24	9.29	12.53
May.....	113	10	8.8	3.44	9.63	13.07
June.....	117	23	19.6	3.90	9.14	13.04
July.....	113	20	17.7	3.80	9.09	12.89
August.....	108	22	20.3	3.60	9.15	12.78
September.....	110	25	22.7	3.73	9.26	12.99
October.....	115	42	36.5	4.06	8.99	13.05
November.....	105	32	30.4	3.95	9.00	12.95
December.....	110	35	31.8	3.87	8.92	12.79
<b>Total.....</b>	<b>1,379</b>					
<b>Averages for the Year</b>		<b>23.09</b>	<b>20.2</b>	<b>3.67</b>	<b>9.20</b>	<b>12.87</b>

From this table it will be seen that during the past year the milk sold in this city has been of excellent quality, rich in both fats and solids not fat. The month of May shows the best record, highest in solids not fat and total solids, lowest in number and percentage of samples below standard.

Respectfully submitted,  
 JAS. M. WHITFIELD, M. D.,  
*Chemist.*



## REPORT OF BACTERIOLOGICAL EXAMINATIONS OF MILK.

DR. E. C. LEVY,  
*Chief Health Officer, Richmond, Va.*

SIR: Since May 1, 1907, I have made bacteriological examinations of seven hundred and seven (707) samples of milk. These samples have been divided into four classes, viz:

Those containing less than 10,000 bacteria per cubic centimeter.

Those containing between 10,000 and 100,000 bacteria per cubic centimeter.

Those containing between 100,000 and 500,000 bacteria per cubic centimeter.

Those containing more than 500,000 bacteria per cubic centimeter.

The following table shows the number of samples received each month and the per cent. of these in each class.

CLASS	PERCENTAGE OF SAMPLES IN EACH CLASS.								Average for 8 Months
	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Below 10,000 .....						12.2	9.2	3.9	3.2
10,000 to 100,000 .....	40.8	53.2	36.2	19.0	11.0	60.6	79.0	76.9	48.2
100,000 to 500,000 .....	32.1	33.0	41.8	50.5	39.5	12.2	11.8	17.3	29.8
Above 500,000 .....	27.1	13.8	22.0	30.5	49.5	6.0	.....	1.9	18.8
Number of Samples .....	81	109	127	105	91	66	76	52	.....

Respectfully submitted,

JAS. M. WHITFIELD, M. D.

## REPORT OF DAIRY INSPECTOR.

DR. E. C. LEVY,

*Chief Health Officer, Richmond, Va.*

SIR: I have the honor to present to you my report as Dairy Inspector for the past eight months, from May 1st to December 31, 1908.

Number visits to dairy farms . . . . .								791
Number dairies visited . . . . .								132
Number of scores made . . . . .								520
Scores	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 30. . . . .	9	13	3	3	..	..	..	..
30 to 40 . . . . .	20	21	16	8	..	..	..	..
40 to 50 . . . . .	17	11	29	22	16	14	9	12
50 to 60 . . . . .	9	4	17	25	18	21	28	28
60 to 70 . . . . .	7	..	10	17	5	20	18	18
70 to 80 . . . . .	3	..	1	..	1	4	5	14
80 to 90 . . . . .	..	..	..	..	..	..	1	4
Number of dairies scored which continued to sell milk during month . . . . .	65	49	76	75	40	59	61	76
Total number scores made during month . . . . .	68	49	76	75	44	64	67	77
Average score . . . . .	41.5	36.4	47.5	50.5	51.4	57	58.4	60.5
Permits refused . . . . .								7
Average score of those to whom permits were refused . . . . .								34.6
Permits suspended . . . . .								21
Permits suspended and restored . . . . .								21
Parties fined for selling milk after their permits were suspended . . . . .								3
Permits revoked . . . . .								23
Permits permanently revoked . . . . .								18
Average score of those whose permits were permanently revoked . . . . .								33.7
Permits revoked and restored . . . . .								5
Average score of those to whom permits were restored . . . . .								36
Discontinued business rather than meet requirements and were then revoked . . . . .								8
Average score of those who discontinued business rather than meet requirements and were revoked . . . . .								33.8
Discontinued business for other reasons . . . . .								10
Average score of ten dairymen who discontinued business for other reasons . . . . .								47.6
Average score of all dairies scored but now out of business . . . . .								37.9
Diseased cows ordered removed from herd . . . . .								17
Gargety cows found and use of milk from same ordered discontinued . . . . .								10
New milk houses built . . . . .								77

New milk houses now under construction . . . . .	1
New cow barns built . . . . .	19
New cow barns under construction at present . . . . .	2

On May 1st, when dairy inspection began, out of 128 dairies then producing milk and cream for the Richmond market only 20 had milk houses, 24 were cooling milk with a cooler, 20 in milk houses, and some of them very badly constructed; 3 in the open air in stable and 1 in a shed, while some others were cooling milk by setting cans in water. In no case were any of the dairymen cooling milk from each cow as she was milked.

During the past eight months two dairymen have sold to other parties, who are still producing milk, and four new men have started dairies. While there has been a wonderful improvement in the milk supply of Richmond, there yet remains a great deal to be done before we can compare our milk supply with a great many other cities, but if the milkmen continue to show the same disposition as they have shown we will soon have a supply to equal any in the United States.

One of the most gratifying features of this first eight months' work is, while every improvement that was suggested by the Health Department was met with strong opposition by the dairymen, after the improvements were made the dairymen saw at once the advantage it was to them, and expressed themselves that they would not go back to the old methods for twice the cost of the improvements they had made. With the exception of a very few, the dairymen seem to show a disposition to maintain good dairies.

Respectfully submitted,

R. H. CURTIS,

*Dairy Inspector.*

## REPORT OF THE PLUMBERS' EXAMINING BOARD.

---

Dr. E. C. LEVY,

*Chief Health Officer, Richmond, Va.*

SIR: I respectfully submit the following report for the year 1907:

Fourteen meetings have been held during the year;

Twelve journeyman plumbers were examined;

Six were found not qualified;

Six new licenses were issued;

Sixty-seven licenses renewed.

Respectfully submitted,

THOS. M. LANDERS,

*Secretary Plumber's Examining Board.*

## FUMIGATOR'S REPORT.

DR. E. C. LEVY,  
*Chief Health Officer, Richmond, Va.*

SIR: I have the honor to submit to you my report for the year ending December, 1907.

### *Houses and Rooms Fumigated*

MONTH	SCARLET FEVER		TYPHOID FEVER		DIPHTHERIA		TUBERCULOSIS		OTHER CAUSES		TOTAL	
	Houses	Rooms	Houses	Rooms	Houses	Rooms	Houses	Rooms	Houses	Rooms	Houses	Rooms
January.....	1	2	16	44	21	66	26	78	68	241	132	431
February.....	2	8	11	24	14	34	12	28	47	224	86	318
March.....	3	8	5	16	10	28	40	122	57	182	115	356
April.....	5	20	4	8	4	18	26	60	52	148	91	254
May.....	1	4	9	24	6	22	30	132	36	126	82	308
June.....	3	22	10	32	3	18	32	118	36	106	84	296
July.....	4	20	12	26	1	6	30	108	53	160	100	320
August.....	1	2	17	44	12	36	33	110	63	236	126	428
September.....	2	4	34	84	12	36	41	134	39	192	128	450
October.....	5	16	9	20	20	64	23	58	26	90	83	248
November.....	6	14	8	24	30	72	24	70	29	80	97	260
December.....	8	24	9	20	44	104	36	84	35	100	132	332
Total.....	41	144	144	366	177	504	353	1,102	541	1,885	1,256	4,001

Respectfully submitted,

JAMES F. WALLER,  
*Fumigator.*

## REPORT OF SMALL-POX HOSPITAL.

DR. E. C. LEVY,  
*Chief Health Officer, Richmond, Va.*

DEAR SIR: I respectfully submit the following report of the number of small-pox cases, suspects and quarantines, from the city and county for the year 1907.

	WHITE			COLORED			TOTAL		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Smallpox from R'chd..	12	1	13	15	8	23	27	9	36
Smallpox from County..	3	.....	3	.....	.....	.....	3	.....	3
Total.....	15	1	16	15	8	23	30	9	39
Suspects from R'chd...	1	1	2	.....	2	2	1	3	4
Suspects from County..	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	1	1	2	.....	2	2	1	3	4
Attendants Quarantined from Richmond	1	2	3	.....	3	3	1	5	6
From County.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	1	2	3	.....	3	3	1	5	6
Total from R'chd.....	14	4	18	15	13	28	29	17	46
Total from County.....	3	.....	3	.....	.....	.....	3	.....	3
Grand Total....	17	4	21	15	13	28	32	17	49

Respectfully submitted,

I. CURD, M. D.,  
*Physician in Charge.*

## REPORT OF DIAGNOSTICIAN.

Dr. E. C. LEVY,  
*Chief Health Officer, Richmond, Va.*

SIR: I have the honor to submit to you my annual report for year ending December 31, 1907.

### *Cases Seen For Diagnosis.*

	<i>White</i>	<i>Colored</i>	<i>Total</i>
Male.....	33	31	64
Female.....	14	22	36
Total.....	47	53	100

Small-pox.....	35
Chicken-pox.....	29
Measles.....	15
Syphilis.....	13
Dermatitis medicamentosa.....	2
Impetigo contagiosa.....	1
Pemphigus febrilis.....	1
Scabies.....	1
Herpes labialis.....	1
Urticaria.....	1
Eczema impetiginosum.....	1
Total cases diagnosed.....	100

### SMALL-POX

	<i>White</i>	<i>Colored</i>	<i>Total</i>
Male.....	12	15	27
Female.....	1	7	8
Total.....	13	22	35

Respectfully submitted,

W. J. WEST, M. D.  
*Diagnostician.*

# REPORT OF PHYSICIAN TO THE POOR, FIRST DISTRICT.

DR. E. C. LEVY,

*Chief Health Officer, Richmond, Va.*

DEAR SIR: I have the honor to submit my report as Physician to the Poor of the First District for the year ending December 31, 1907.

Number of visits, white . . . . .	2,079	
Number of visits, colored . . . . .	1,473	
Total number of visits . . . . .		3,552
Number of patients, white . . . . .	355	
Number of patients, colored . . . . .	256	
Total number of patients . . . . .		611
Number of deaths, white . . . . .	1	
Number of deaths, colored . . . . .	6	
Total number of deaths . . . . .		7
Number of patients sent to City Home . . . . .		29
Number of patients treated . . . . .		611
Of the 611 patients visited, 188 were male and 423 female . . . . .		

Respectfully submitted,

T. G. PRETLOW, M. D.,

*Physician to the Poor.*



## REPORT OF PHYSICIAN TO THE POOR, SECOND DISTRICT.

DR. E. C. LEVY,  
*Chief Health Officer, Richmond, Va.*

DEAR SIR: I have the honor to submit to you my report as Physician to the Poor of the Second District for the year ending December 31, 1907.

Number of visits, white .....	1,549	
Number of visits, colored .....	2,135	
Total number of visits .....		3,684
Number white patients .....	441	
Number colored patients .....	584	
Total number of patients .....		1,025
Number of deaths, colored .....	15	
Number of deaths, white .....	....	
Total number deaths .....		15
Number patients sent to City Home .....	20	
Number of patients treated .....	1,025	
Number of patients discharged .....	960	
Patients with other doctors .....	5	
On hand December 31, 1907 .....	25	

Respectfully submitted,

J. F. CRANE, M. D.,  
*Physician to the Poor.*

## REPORT OF PHYSICIAN TO THE POOR, THIRD DISTRICT.

---

DR. E. C. LEVY,

*Chief Health Officer, Richmond, Va.*

DEAR SIR: I have the honor to submit to you my report as Physician to the Poor of the Third District for the year ending December 31, 1907.

Number of visits, white . . . . .	1,638	
Number of visits, colored . . . . .	2,262	
Total number of visits . . . . .		3,900
Number of white patients . . . . .	286	
Number of colored patients . . . . .	467	
Total number of patients . . . . .		753
Number of deaths . . . . .	10	
Number of patients sent to the City Home . . . . .	33	
Number of patients discharged . . . . .	696	
On hand December 31, 1907 . . . . .	14	

I visited six schools daily five days in a week during school term.

Respectfully submitted,

T. E. STRATTON, M. D.,

*Physician to the Poor.*

## REPORT OF PHYSICIAN TO THE POOR, FOURTH DISTRICT.

DR. E. C. LEVY,  
*Chief Health Officer, Richmond, Va.*

DEAR SIR: I have the honor to submit my report as Physician to the Poor of the Fourth District for the year ending December 31, 1907.

Number of visits, white .....	2,221	
Number of visits, colored .....	1,166	
Total number of visits .....		3,387
Number of patients, white .....	597	
Number of patients, colored .....	412	
Total number of patients .....		1,009
Number of deaths .....	7	
Patients sent to the City Home .....	16	
On hand December 31, 1907 .....	14	

Of the 1,009 patients visited 351 were males and 658 females.

Respectfully submitted,

L. D. BATKINS, M. D.,  
*Physician to the Poor.*

## REPORT OF SANITARY OFFICER, FIRST DISTRICT.

DR. E. C. LEVY,

*Chief Health Officer.*

DEAR SIR: I have the honor to submit to you my report for the sanitary work done in my district for the year ending December 31, 1907.

Alleys reported . . . . .	67
Bath tubs reported . . . . .	9
Bursted pipes reported . . . . .	153
Cellars and damp walls reported . . . . .	10
Sewers ordered unchoked . . . . .	132
Closets out of order . . . . .	395
Closets ordered new . . . . .	96
Closets condemned . . . . .	73
Closet houses ordered repaired . . . . .	48
Contagious disease cards put up . . . . .	52
Culture stations visited . . . . .	214
Conductors and gutters ordered repaired . . . . .	64
Catch basins reported . . . . .	43
Cases reported to Police Station . . . . .	108
Cases in Police Court . . . . .	110
Dry closets ordered cleaned . . . . .	279
Dry closet houses ordered repaired . . . . .	54
Dry closet boxes ordered repaired . . . . .	83
Dirty yards ordered cleaned . . . . .	516
Dead animals reported . . . . .	25
Number of births investigated . . . . .	35
Garbage reported . . . . .	79
Hydrants out of order . . . . .	89
Hydrants ordered new . . . . .	76
Manure piles ordered removed . . . . .	25
No cause for complaint . . . . .	150
Old wells ordered filled . . . . .	96
Owners and agents notified . . . . .	1,450
Premises inspected and visited . . . . .	4,836
Sewer connections ordered . . . . .	105
Sewers ordered repaired . . . . .	39
Sinks ordered unchoked, trapped and repaired . . . . .	77
Stop cocks ordered in . . . . .	12
Stagnant water reported . . . . .	29
Summons served . . . . .	76
Tenants ordered to take water . . . . .	160
Traps ordered repaired and cemented around . . . . .	61
Vacant houses ordered closed . . . . .	7
Weeds ordered cut down . . . . .	13
Water connections ordered . . . . .	18
Wells ordered cleaned and repaired . . . . .	8
Yards ordered filled . . . . .	4
Miscellaneous visits . . . . .	110
Total visits . . . . .	6,677

Respectfully submitted,

W. A. CRUMP.

## REPORT OF SANITARY OFFICER, SECOND DISTRICT.

DR. E. C. LEVY,

*Chief Health Officer.*

DEAR SIR: I have the honor to submit to you my report for the sanitary work done during the year in Second District from January 1, 1907, to October 15th, and in Fourth District from October 15th to December 31st.

Old closets ordered repaired . . . . .	314
New closets ordered put in . . . . .	145
Privies inspected . . . . .	503
Privies ordered cleaned . . . . .	425
Privy boxes ordered in . . . . .	67
Privy boxes ordered repaired . . . . .	97
Old stench traps repaired . . . . .	116
New stench traps ordered in . . . . .	79
Old hydrants ordered repaired . . . . .	128
New hydrants ordered in . . . . .	60
Sewer connections ordered . . . . .	194
Sewers ordered repaired . . . . .	103
Sewers ordered unchoked . . . . .	144
Water connections ordered . . . . .	163
Rain conductors ordered repaired . . . . .	75
Kitchen sinks ordered repaired . . . . .	87
Kitchen sinks ordered trapped . . . . .	63
Water pipes ordered repaired . . . . .	178
Yards inspected . . . . .	1,030
Yards ordered cleaned . . . . .	645
Vacant lots inspected . . . . .	135
Vacant lots ordered cleaned . . . . .	128
Areas inspected . . . . .	123
Areas ordered cleaned . . . . .	90
Cellars ordered cleaned . . . . .	74
Outhouses inspected . . . . .	60
Outhouses ordered cleaned . . . . .	42
Alleys inspected . . . . .	183
Alleys ordered cleaned . . . . .	154
Old wells inspected . . . . .	56
Old wells ordered filled . . . . .	31
Manure piles ordered moved . . . . .	126
Leaky roofs ordered repaired . . . . .	25
Contagious disease cards put up . . . . .	63
Miscellaneous visits . . . . .	784
Agents, owners, and plumbers visited . . . . .	1,411
Premises inspected . . . . .	1,691
Original houses visited . . . . .	1,591
Total number visits made . . . . .	4,823

Respectfully submitted,

W. H. MOSLEY.

## REPORT OF SANITARY OFFICER, SECOND DISTRICT.

DR. E. C. LEVY,

*Chief Health Officer.*

SIR: I have the honor to submit to you my report for the work done in the Second District from October 15th to December 31, 1907.

Old closets ordered repaired . . . . .	31
New closets ordered in . . . . .	19
Dry closets inspected . . . . .	117
Dry closets ordered cleaned . . . . .	68
Closet boxes ordered in . . . . .	15
Old stench traps ordered repaired . . . . .	9
New stench traps ordered in . . . . .	3
Old hydrants ordered repaired . . . . .	25
New hydrants ordered in . . . . .	6
Sewer connections ordered . . . . .	9
Sewers ordered repaired . . . . .	2
Water connections ordered . . . . .	12
Rain conductors ordered repaired . . . . .	5
Kitchen sinks ordered repaired . . . . .	7
Kitchen sinks ordered trapped . . . . .	3
Water pipes ordered repaired . . . . .	6
Yards inspected . . . . .	117
Yards ordered cleaned . . . . .	43
Vacant lots inspected . . . . .	5
Vacant lots ordered cleaned . . . . .	3
Areas inspected . . . . .	4
Areas ordered cleaned . . . . .	3
Cellars ordered cleaned . . . . .	3
Outhouses ordered cleaned . . . . .	11
Outhouses inspected . . . . .	23
Alleys inspected . . . . .	29
Alleys ordered cleaned . . . . .	17
Old wells inspected . . . . .	16
Old wells condemned and ordered filled . . . . .	2
Manure piles ordered removed . . . . .	2
Leaky roofs ordered repaired . . . . .	17
Contagious disease cards put up . . . . .	17
Original houses visited . . . . .	235
Premises inspected and revisited . . . . .	400
Agents, owners and plumbers visited . . . . .	341
Miscellaneous visits and orders . . . . .	154
New sinks ordered in . . . . .	1
<b>Total number visits made . . . . .</b>	<b>907</b>

Respectfully submitted,

J. T. GILL.

## REPORT OF SANITARY OFFICER, THIRD DISTRICT.

DR. E. C. LEVY,  
*Chief Health Officer.*

DEAR SIR: I have the honor to submit to you my report for the sanitary work done in my district for the year ending December 31, 1907.

Old closets ordered repaired . . . . .	389
New closets ordered in . . . . .	118
Privies inspected . . . . .	32
Privies ordered cleaned . . . . .	29
Privies ordered renewed . . . . .	5
Privy boxes renewed . . . . .	15
Old stench traps ordered repaired . . . . .	83
New stench traps ordered in . . . . .	60
Old hydrants ordered repaired . . . . .	141
New hydrants ordered in . . . . .	43
Sewer connections ordered . . . . .	40
Sewer connections ordered repaired . . . . .	29
Sewers ordered unchoked . . . . .	169
Water connections ordered . . . . .	69
Water pipes ordered repaired . . . . .	199
Kitchen sinks ordered repaired . . . . .	61
Kitchen sinks ordered trapped . . . . .	27
Yards inspected . . . . .	585
Yards ordered cleaned . . . . .	300
Yards ordered graded or filled . . . . .	11
Rain conductors ordered repaired . . . . .	28
Leaky roofs ordered repaired . . . . .	19
Areas inspected . . . . .	48
Areas ordered repaired . . . . .	14
Cellars inspected . . . . .	88
Cellars ordered trapped . . . . .	3
Vent pipes ordered . . . . .	16
Outhouses inspected . . . . .	36
Outhouses ordered cleaned . . . . .	33
Alleys inspected . . . . .	140
Alleys ordered cleaned . . . . .	83
Alleys advised to grade or pave . . . . .	21
Old wells condemned and ordered filled . . . . .	6
Manure piles ordered moved . . . . .	51
Contagious disease cards put up . . . . .	43
Culture stations visited . . . . .	70
Miscellaneous nuisances abated . . . . .	182
Original houses visited . . . . .	916
Premises inspected . . . . .	1,279
Agents, owners and plumbers visited . . . . .	1,216
Visits with sanitary officers . . . . .	423
Visits for plumbing inspector . . . . .	1,096
Total number visits made . . . . .	5,090

Respectfully submitted,

E. A. BOAZ.

# REPORT OF SANITARY OFFICER, FOURTH DISTRICT.

DR. E. C. LEVY,

*Chief Health Officer.*

DEAR SIR: I have the honor to submit to you my report for the sanitary work done in the Fourth District from January 1st to October 15th, at which time my resignation took effect.

Old closets ordered repaired . . . . .	360
New closets ordered in . . . . .	123
Privies inspected . . . . .	585
Privies ordered cleaned . . . . .	425
Privies ordered renewed . . . . .	100
Privy boxes ordered renewed . . . . .	192
Old stench traps ordered repaired . . . . .	57
New stench traps ordered in . . . . .	34
Old hydrants ordered repaired . . . . .	63
New hydrants ordered in . . . . .	47
Sewer connections ordered . . . . .	120
Sewers ordered repaired . . . . .	50
Sewers ordered unchocked . . . . .	131
Water connections ordered . . . . .	61
Water pipes ordered repaired . . . . .	109
Rain conductors ordered repaired . . . . .	34
Kitchen sinks ordered repaired . . . . .	32
Kitchen sinks ordered trapped . . . . .	26
Yards inspected . . . . .	174
Yards ordered cleaned . . . . .	143
Yards ordered graded and filled . . . . .	42
Vacant lots inspected . . . . .	62
Vacant lots ordered cleaned . . . . .	56
Areas inspected . . . . .	10
Areas ordered repaired . . . . .	3
Cellars inspected . . . . .	31
Cellars ordered trapped . . . . .	6
Outhouses inspected . . . . .	71
Outhouses ordered cleaned . . . . .	60
Alley inspected . . . . .	164
Alleys ordered cleaned . . . . .	56
Alleys advised to grade or pave . . . . .	96
Old wells condemned and ordered filled . . . . .	66
Manure piles ordered moved . . . . .	65
Leaky roofs ordered repaired . . . . .	7
Contagious disease cards put up . . . . .	32
Culture stations visited . . . . .	85
Miscellaneous nuisances abated . . . . .	23
Original houses visited . . . . .	1,220
Premises inspected or revisited . . . . .	2,919
Agents, owners and plumbers visited . . . . .	1,313
Total number visits made . . . . .	5,459

Respectfully submitted,

A. D. WREN.



